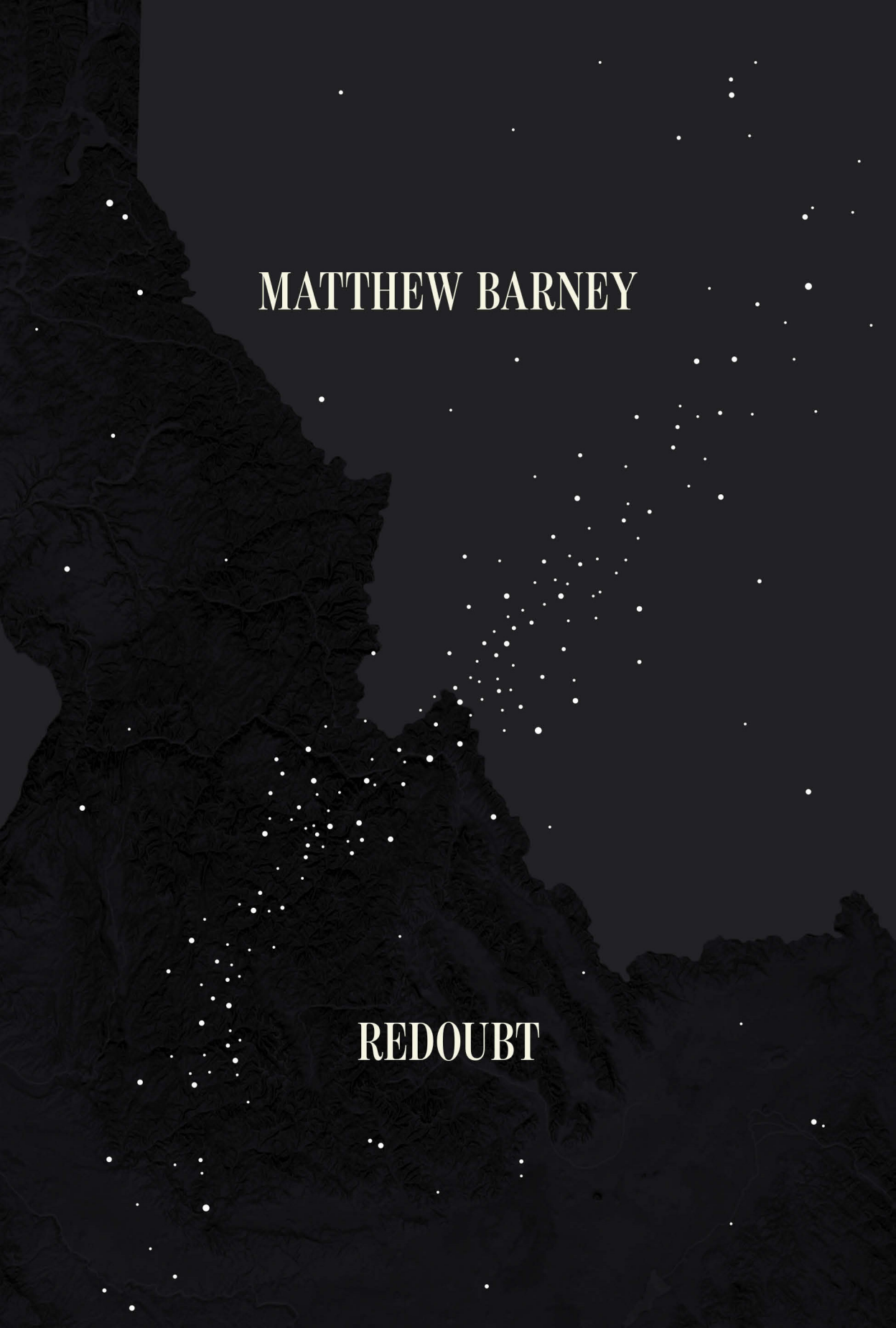
MATTHEW BARNEY
REDOUBT

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With an introduction by Pamela Franks

And essays by Elisabeth Hodermarsky, André Lepecki, Arthur D. Middleton,
Molly Nesbit, Gifford Pinchot, Jennifer Raab, and John Rember

MATTHEW BARNEY

REDOUBT

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DIRECTOR'S FOREWORD

Many words have been used to describe Matthew Barney's art: ambitious, physical, immersive, cryptic, poignant. It is a rich tapestry of performance, film, video, photography, installation, and sculpture that surprises and challenges the viewer, and his new body of work, *Redoubt*, is no exception. With this project, Barney (born 1967, B.A. 1989) tackles epic themes of myth, landscape, and survival through his characteristically experimental approach and masterful handling of a rich variety of media.

Redoubt was made over a four-year period, from 2016 through 2019. At the center of the project is a two-hour film of the same name, which makes its world premiere in New Haven as part of the present exhibition. The film tells an allegorical story of a wolf hunt set in Idaho's Sawtooth Mountains, close to where the artist grew up in the 1970s and 1980s. In addition to the film, the exhibition includes more than forty sculptures, engravings, and electroplated copper plates that continue the artist's notable shift in materials over the past decade, from works in plastic and petroleum jelly to cast metals. Particularly remarkable are the monumental sculptures that the artist made by pouring molten copper and brass through the trunks of trees harvested from a wildfire-scorched forest in the Sawtooth Mountains.

Matthew Barney: Redoubt is the artist's first major exhibition at Yale University, where as an undergraduate he made performance-based videos and installations rooted in his interest in the human body and his experiences as an athlete. Barney's best-known works show intensified engagement with the same ideas, such as the *CREMASTER Cycle* (1994–2002)—a set of five films exploring sexuality and creation that catapulted Barney to international fame. Another series, *Drawing Restraint* (1987–present), consists of videos and performances that explore the artist's struggle to create under constraints both physical and metaphorical. These and other projects also highlight Barney's exceptional gift for rich and complex storytelling.

Having spent little time at Yale since he was an undergraduate, Barney was reintroduced to the University by collectors Anna Marie and Robert F. Shapiro, B.A. 1956. The Shapiros were early supporters of the artist and gave the Gallery its first work by Barney in 1993: *unit BOLUS* (1991; inv. no.

1993.72.1), an eight-pound dumbbell cast from petroleum jelly accompanied by a stainless-steel support and an electronic freezing device. In 2015 the Shapiros introduced Barney to Pamela Franks, former Senior Deputy Director and Seymour H. Knox, Jr., Curator of Modern and Contemporary Art. Their meeting led Franks to arrange for the artist to make multiple visits to New Haven and Yale's campus. On these visits, Barney probed the many ties between the University and the lore of the American West, driven by his upbringing in Idaho and his interests in art and science, and delved into Yale's extraordinary collections and intellectual resources. He studied American landscape paintings at the Yale University Art Gallery, visited the museum's 2016 exhibition *Yosemite: Exploring the Incomparable Valley*, toured the ruins of New Haven's Winchester Arms factory, explored the Native American collections at the Yale Peabody Museum of Natural History, and met with curators and faculty members to discuss topics ranging from art-historical landscape traditions to metallurgy to wolves. In this way, Yale came into focus as the perfect site for Barney to debut his newest allegorical exploration. Through its wide-ranging essays, authored by leading scholars of art history, dance, environmental studies, and other fields, the present catalogue also testifies to Barney's inspiring interdisciplinary engagement with his alma mater.

On behalf of the entire museum, I extend my thanks to Matthew Barney for the extraordinary opportunity to show *Redoubt* here. For making the project possible, I acknowledge the support of the Janet and Simeon Braguin Fund and the Robert Lehman, B.A. 1913, Endowment Fund, as well as the Hayden Visiting Artists Fund. Following the exhibition in New Haven, *Redoubt* travels internationally, and I am grateful to Philip Tinari, Director and Chief Executive Officer; Shixuan Luan, Assistant Curator; and Patrick Rhine, Director of Research, at UCCA, Beijing; as well as Ralph Rugoff, Director, and Aoife Leach, General Manager, at Hayward Gallery, London, for sharing this remarkable exhibition with a global audience.

Stephanie Wiles
The Henry J. Heinz II Director, Yale University Art Gallery

ACKNOWLEDGMENTS

This once-in-a-lifetime project required a team of collaborators, and I am grateful to all who contributed to making this exhibition and publication possible—not only at the Yale University Art Gallery but also on campus and beyond. Working with Matthew Barney was a profound experience; he openly shared his ideas and process, and I have learned from his creative vision and incisive intellect. I am inspired by his generous spirit and the way in which his brilliance shines all the more brightly because his feet are firmly planted on the ground.

At the artist's studio, special thanks go to Mamie Tinkler, whose partnership in thinking through the project and coordination of its wide-ranging details were essential. Jade Archuleta-Gans educated the curatorial team about complex technical processes, and Kanoa Baysa planned fabrication of the sculptures with exhibition spaces in mind. From Gladstone Gallery, thanks go to Allyson Spellacy, former Senior Director, and Trina Gordon, Director; Andrew Huff, Director of Communications; and Barbara Gladstone herself.

Staff across the Gallery championed this project from the beginning. I am grateful for the support of the former and current Henry J. Heinz II Directors, Jock Reynolds and Stephanie Wiles; of Laurence Kanter, Chief Curator and the Lionel Goldfrank III Curator of European Art; and of Heather Nolin, Deputy Director for Exhibitions, Programming, and Education. Elisabeth Hodermarsky, the Sutphin Family Senior Associate Curator of Prints and Drawings, was an essential curatorial collaborator. Frauke V. Josenhans, former Horace W. Goldsmith Associate Curator of Modern and Contemporary Art, offered advice, while Alexander Harding, former Senior Museum Assistant, now Senior Photographer, served as an able coordinator.

Andrew Daubar, Exhibition Production Manager, and Amy Dowe, Senior Associate Registrar, took on leadership roles with regard to shipping and installation, with support from L. Lynne Addison, Registrar; Jeffrey Yoshimine, Deputy Director for Exhibition and Collection Management; Patrick Brown, Museum Technician; Carol Snow, Deputy Chief Conservator and the Alan J. Dworsky Senior Conservator of Objects; and Anne Gunnison, Associate Conservator of Objects. Molleen Theodore, Associate Curator of Programs, conceived the programming schedule, while Jessica Sack, the Jan and Frederick

Mayer Senior Associate Curator of Public Education, and Sydney Skelton Simon, the Bradley Assistant Curator of Academic Affairs, developed educational offerings. Joellen Adae, Director of Communications, with Janet Sullivan, Communications Coordinator, oversaw publicity; Christopher Sleboda, Director of Graphic Design, and Chris Chew, Graphic Designer, generated the exhibition design; Brian P. McGovern, Associate Director of Advancement, led fundraising efforts; and Charlene Senical, Operations Manager, handled finances.

The artist has said that this is a book he has wanted to make for some time, one in which "research and collaborations in more specialized fields are combined with [his] own storytelling and sculpture-making practice." I am therefore indebted to all of the authors: Elisabeth Hodermarsky; André Lepecki, Professor and Chair of Performance Studies, Tisch School of the Arts, New York University; Arthur D. Middleton, Assistant Professor of Environmental Science, Policy, and Management, University of California, Berkeley; Molly Nesbit, Professor of Art, Vassar College; Jennifer Raab, Associate Professor of the History of Art, Yale University; and John Rember, an author based in the Sawtooth Valley. Tiffany Sprague, Director of Publications and Editorial Services, merits special recognition for her exceptional editorial leadership and careful stewardship of the artistic vision of the catalogue; she was assisted by Jennifer Lu, Editorial and Production Assistant. Graphic designers Joseph Logan and Katy Nelson worked hand-in-hand with the artist to develop the design. Thanks also go to John ffrench, Director of Visual Resources, and Kathleen Mylen-Coulombe, Rights and Reproductions Coordinator.

Yale colleagues at the Payne Whitney Gymnasium facilitated access as Matthew led us to the site of an early work, *Field Dressing* (1989). Timothy Young, Curator, Modern Books and Manuscripts, provided access to the Beinecke Rare Book and Manuscript Library. David Skelly, Director of the Yale Peabody Museum of Natural History, opened storerooms up to the artist and guided thinking about the ways in which this project could bridge art and environmental studies. Emily Coates, Associate Professor Adjunct of Theater Studies, Yale School of Drama, helped draw out the significance of choreography in *Redoubt*. Colleagues at the Yale School of Art and the Department of the History of Art were also thoughtful collaborators.

Finally, I am grateful to UCCA, Beijing, and Hayward Gallery, London, for their support in bringing *Redoubt* to their organizations.

Pamela Franks
The Class of 1956 Director, Williams College Museum of Art, and former Senior Deputy Director and Seymour H. Knox, Jr., Curator of Modern and Contemporary Art, Yale University Art Gallery

Thomas Moran, "A Snowy Mountain Range (Path of Souls, Idaho)," 1896. Oil on canvas, 14 x 27 in. (35.6 x 68.6 cm). Denver Art Museum, The Roath Collection, inv. no. 2013.109

INTRODUCTION

Pamela Franks

Matthew Barney's *Redoubt* (2016–19) traces an epic story of a wolf hunt set in Idaho's Sawtooth Mountain range, intertwining the theme of the hunt with those of mythology and artistic creation. An ambitious ensemble project, *Redoubt* comprises a feature-length film, monumental sculptures cast from burned trees harvested from the region, engravings, and several series of electroplated copper plates. The seed of this new work was sown as far back as the 1980s, when Barney was a teenager growing up in Boise, Idaho, and early debates surrounding the reintroduction of wolves into the central Idaho wilderness caught his attention.[1] The artist recalls that "the conflict was in the air well before the reintroduction actually happened, and it was intense. It captured something essential about the state and its political divide, which has been extreme for as long as I can remember."[2]

After centuries of hunting and extermination, wolves had been driven almost to extinction in the United States; as early as 1926, the last wolf pack in Yellowstone had been killed, although sightings of individual wolves were still reported in the years following. In 1974 the wolf was added to the list of endangered species, thus mandating the government to work toward recovering the population under the newly passed Endangered Species Act.[3] In the late 1980s and early 1990s, a federal wolf recovery team devised a plan to return the gray wolf (*Canis lupus*) population, focusing especially on Yellowstone National Park, in Wyoming and parts of Idaho and Montana, as well as on the Frank Church–River of No Return Wilderness area, in central Idaho.[4] The reintroduction was strongly opposed by those in the livestock industry, who believed wolves would decimate their herds, and by hunters and outfitters, who feared the impact that wolves would have on the game population. Years of legislative and public debate surrounded the reintroduction plan, culminating in a series of public hearings in 1994 held across several states.[5] In 1995 the U.S. Department of the Interior's Fish and Wildlife Service released thirty-one wolves in Idaho, along the Middle Fork of the Salmon River and into the Frank Church Wilderness area.[6]

Growth of the population was swift, and by 2001 there were thirty documented breeding pairs in Idaho. The state began to press the federal government

to remove the wolf from the endangered species list and to turn over management of the population. After several years of additional back-and-forth, the wolf was finally delisted, and in 2009 Idaho opened wolf hunting for the first time since the reintroduction.[7] The state's Fish and Game Commission set a quota on the maximum number of wolves that could be legally killed, but because wolves are so difficult to track and hunt, the quota has never been reached. At the state's last federally mandated count, in 2015, an estimated 786 wolves were identified. One year later, Barney began work on *Redoubt*.

The strong emotions and fiercely held points of view that fueled the heated debates surrounding the reintroduction were important context for the evolution of Barney's maturing consciousness, and they stuck with him as he grew his artistic practice. Looking back, he reflects that, "given the place that wolves occupy in our imagination, the conversation took on a mythological quality, even for a young mind, and had a much greater meaning than the sum of the two arguments being voiced. I followed the progress of the reintroduction over the years, and always had in mind to take it on artistically."[8] This long gestation period is countered by the relatively concentrated amount of time—just four years—spent realizing the project. By contrast, Barney's other ensemble film and sculptural projects, most notably his breakthrough *CREMASTER Cycle* (1994–2002) and the more recent *River of Fundament* (2014), occupied many more years of his creative energies.[9] *Redoubt* is accordingly characterized by a distinct focus that contrasts with the expansiveness of these earlier works, as well as a more introspective feel that is perhaps in keeping with the artist's sustained interest in the wolf debate.

With *Redoubt*, Barney tackles the polarizing topic of wolves, and in so doing composes a complex portrait of the physical and psychological landscape of central Idaho, one that uses classical, cosmological, and American myths to reach beyond any specific site and explore, more generally, humankind's place in the natural world. The film at the center of *Redoubt* loosely adapts the classical myth of Diana, goddess of the hunt and protector of innocence and purity, and Actaeon, a hunter who accidentally trespasses on her privacy and is punished.[10] Over two hours and fourteen minutes, the film traces the movements of six characters whose actions overlap and eventually intersect.

The opening segment of the film introduces the viewer to the dramatic mountain landscape and the natural forces at play throughout: extreme winter weather, wolves and other wildlife, towering trees, and a star-filled night sky. It also introduces five of the film's six characters and sets the narrative in motion. Diana (Anette Wachter) is a modern-day sharpshooter on a wolf hunt in the Idaho wilderness.[11] She is accompanied by her attendants, the Calling Virgin (Eleanor Bauer, who also choreographed much of the dance of the film) and the

Tracking Virgin (Laura Stokes).[12] We first encounter the trio at their campsite, Diana in her tent (pp. 25–26, 28–29) and the two Virgins in a hammock, sleeping head to toe (p. 27). The only male character, the Engraver, played by Barney, is a bearded and uniformed ranger. He is first shown driving his U.S. Forest Service pickup truck to a trailer by a river (pp. 33–34). He enters, wordlessly, what seems to be the home and workshop of the fifth character, the Electroplater (K. J. Holmes), who bestows upon him two brown paper–wrapped copper plates.[13] The significance of the plates as both a site and symbol of transformation is also introduced in the opening segment: inside the trailer, the Electroplater has set up a rudimentary laboratory with copper objects, chemical baths, and a number of books on electroplating and alchemy (p. 35); she steps outside the trailer and brushes away a layer of dirt on the ground to uncover another copper plate, whose surface is marked by exposure to the elements (p. 36).

From here, the film progresses as a series of six hunts that unfold over six days. In Hunt 1, Diana, with her attendants, begins to traverse the winter terrain in pursuit of the elusive wolf (p. 54). The Engraver surveys the landscape and mounts a camera on a tree near an elk carcass to continue his observations from afar (p. 64), and the Electroplater, in her trailer, begins to build a model of the galaxy centered on the constellation Lupus (the wolf; pp. 66–67). Hunt 2 features Diana tracking her prey; her attendants dance with their natural surroundings, and with each other, in a hot spring, while Diana sits nearby (pp. 82–83, 85–87). Meanwhile, the Engraver sets up a stand on which he places one of his copper plates, then proceeds to draw the mountainous landscape on its surface (p. 88). He brings the plate back to the trailer, where the Electroplater submerges it in an electrochemical bath (p. 96), through which copper accretions grow on the engraved lines. They share a drink (p. 97) while watching on a laptop what the camera the Engraver had set up earlier in the day captures: a woman appears at the scene of the carcass, surprising the viewers (p. 99). This accidental view spurs the Engraver to follow the trio on their subsequent wilderness hunts, documenting their actions in additional engravings. In the interludes between hunts, the Engraver returns to the Electroplater's trailer, bringing her his copper plates for processing. In Hunts 3 and 4, Diana continues to track the wolf while the Engraver tracks Diana, the interactions between both humans and animals becoming increasingly confrontational. In her trailer, the Electroplater continues her work on the model of Lupus, which becomes more and more complex.

In a striking shift from the first few hunts, in Hunt 5 both the setting and the choreography change. The Engraver drives into a town (p. 192) and encounters the film's sixth character, the Hoop Dancer—played by indigenous contemporary dancer and choreographer Sandra Lamouche (Bigstone

Cree Nation)—who performs a hoop dance inside an American Legion building (pp. 195, 197–99).[14] The change of scene is a stark—and poignant—contrast to what came before. Thus far, the winter landscape has been omnipresent, an icy and difficult environment for the dancers but one that has also showcased their movements. Now, three scenes are intercut, each with a different location: the Hoop Dancer performs in the American Legion; the Engraver sketches in a notebook while sitting at a bar in town; and back in the mountains, high above the winter landscape, the Calling Virgin performs a dance while suspended in a tree (pp. 196, 201). Though the setting of each scene is radically different, the Hoop Dancer's dance, like those of the Virgins in the snow, is similarly highlighted by its environs; by placing it in the American Legion, a symbol of patriotism, the film folds in another layer of association with the American West: the oppression and decimation of indigenous people and culture. In the context of the film, however, her dance represents less the larger historical tragedy—an endpoint or extinction—and more the possibility of survival and transcending limits through creative work. Visually, her dance suggests a story of predator and prey that resonates with the film's larger hunt narrative. It also adds to the larger themes that run through *Redoubt*, the hoops symbolizing the cycle of life through creation, destruction, and regeneration, and formally recalls the arcs of the cosmological model the Electroplater builds in her trailer. Lamouche moves with and through her hoops as if performing her way through and beyond the present moment.[15] The dance thus serves as a critical juncture in the overall narrative of the film and functions as a portal into the film's dramatic conclusion. As if conjured through the energy that results from the heightened activity of Hunt 5, the final hunt features the Electroplater dancing outside her trailer during an eclipse, while wolves take over inside, destroying the trailer's domestic world (pp. 241–44, 246–49). As the film closes, the trailer has become a locus of energy and a point of conversion for the many narrative layers of the film—human and cosmological.

Barney deliberately sought a simple structure for *Redoubt*. His decision to organize the film around six hunts stems from an early conversation he had with a hunting outfitter, who suggested six days would likely be the minimum amount of time required to track and locate wolves. The artist's original conception was that the work would be created while he himself tracked wolves over a six-day period. When it became clear that the elaborate setup required to film in the landscape was going to scare off the very wolves he wanted to track, the artist changed course and instead wrote a script.[16] In contrast to the *CREMASTER Cycle* and *River of Fundament*, however, for which Barney created storyboards—with drawings, postcards, photographs, and images from the internet—for *Redoubt*, he just sat down and wrote.

Just as Barney chose the six-hunt structure based on the likely time frame for a wolf hunt, he also sought to provide a truthful depiction of the landscape—in his words, one "grounded in the real."[17] Barney worked once again with Peter Strietmann, the director of photography for his earlier films, but for *Redoubt*, the camera setup and photographic approach are more direct. The rugged character of the sites, in addition to the extreme and rapidly changing weather conditions, meant that Barney and Strietmann had limited time to capture each scene, and changing camera positions in the deep snow proved challenging. For the first time, they used drone cameras to supplement tripod and handheld setups, allowing for much more extensive coverage of the landscape. In addition to being fairly easy to reposition, drones also captured a predatory perspective that Barney felt reinforced the themes of hunting and surveillance.[18]

With no spoken lines or dialogue in the film, dance becomes a common language to tell the story.[19] Throughout the film, the characters' hunting and tracking movements are formalized into choreographies that echo, foreshadow, and interpret the encounters with wildlife that pervade the story, connecting the characters across time and space; in short, the characters communicate through dance, letting movement replace language as they pursue each other and their prey. As mentioned, Bauer created most of the film's dance, and all of her choreography for *Redoubt* is performed outdoors, in dialogue with the extreme surroundings. As with filming, the setting proved challenging, the mountainous terrain and snow making the choreography difficult, but Barney found the tension productive. Diana and her attendants perform their scenes in camouflage and long underwear, rooting the trio in the environment and in the narrative of the hunt, further highlighting how the film is a product of a story grounded in the real.[20]

The music of *Redoubt* emphasizes the wordless quiet of the film and echoes its sparse but vast landscape. Jonathan Bepler, Barney's longtime collaborator, worked within the structure of the film's narrative, approaching each hunt as a distinct movement in a symphony or chapter in an allegory.[21] Each hunt features a specific instrument, theme, and elemental focus. Bepler and Barney began with the notion that the sounds generated by the landscape, as well as by the animal and human characters within it, would be the basis of the score. As the process evolved, Bepler added to these concrete compositions, introducing traditional instrumentation. By combining musical passages with environmental sounds that had been heightened to the point of artificiality, Bepler's score creates an ambiguity between music and sound, and between narrative and nature. In the scenes taking place inside the electroplating trailer, for instance, the alchemical processes—the hum and buzzing of electrical devices or the fizzing of corrosive acids—are expanded into complex, otherworldly

electronic music, linking the earthly to the celestial. Bepler and Barney were particularly interested in how the boundless landscape, snow, and cold affected perceptions of sound in the mountains. In the final sound and music mix, this phenomenon is replicated through a multichannel speaker system, in which different instruments and musical moments are spatialized in the theater, immersing the listener in the aural landscape of the film.

Just as Bepler's score grows out of the film and into the viewer's space, Barney has continued the creative endeavor of *Redoubt* beyond the film. He has developed the engravings made by his character in the film into several series of electroplates—thus extending the story of the copper plates' creation from the filmic world into the real one.[22] Each series features a key subject or image from the film, such as the landscape of the Sawtooth Mountains (p. 89) or Diana dressed in camouflage standing in front of a tree (p. 225). To make the plates, the original engraving that Barney created on site for the film was first digitally reproduced on multiple plates. Then, each plate was submerged in an electrochemical bath, a process in which copper accretions grew on the plate. The longer each plate was left in the bath, the more copper accretions grew, such that in the final states the material seems to overtake the drawing, effectively transforming the drawing into relief. One plate in each series retains the metal connectors of the framework that was used to immerse it in the electrochemical bath (p. 65), and in those cases, the work is fully three-dimensional, further emphasizing the transformation into sculpture while also highlighting the artist's process.

A group of large-scale sculptures cast from burned trees completes the project. To make them, Barney poured molten brass and copper into trees that he harvested from the Sawtooth Mountains and hollowed out—and invented a technique that deliberately prevents the metals from mixing, instead allowing them to intertwine around each other. The materials of these sculptures echo those of the bullets and shell casings that populate the hunts. Two of the sculptures are named after Diana (pp. 346–47, 350, 352–53) and her attendants (pp. 333–37), and the marbled metal resonates with the Virgins' intertwining bodies in the film's choreography. The trees are displayed horizontally (as if felled) and diagonally (gunlike, as if propped and aimed), both dominating and defining the space they occupy.

The tree sculptures not only continue the many connections between the world of the film and that of the viewer, but they are also literal vestiges of the landscape in which the film is set. Thus, like the score, they expand the world of the film into reality, inviting viewers to enter the redoubt. The sculptures make manifest the artist's exploration of a story grounded in the real. Images from the film live on through these imposing and majestic objects. The transformation of these trees into sculpture is also perhaps the most direct

instance of Barney's interest in cosmology and in Cosmic Hunt narratives.[23] In the fire-ravaged trees, the story of the destruction and regeneration of the natural environment takes on permanent, physical form through the use of inorganic metal—similar to how, in the film, the story of the wolf is translated into the constellation Lupus, the cosmic myth captured in the sky for eternity.

The present publication expands Barney's project further, with hundreds of still photographs that track the film's narrative, images of the electroplates and the sculptures as well as process images of their creation, and found imagery that served as inspiration for the work. The essays take disparate approaches—some lyrical, others more objective—to the themes that course through *Redoubt*. They range from a historical essay from the early days of forestry[24] to a look at the landscape of the Sawtooth Mountains through the lens of maps; from an art-historical essay that examines the film in relation to landscape painting and myth to a text that explores Barney's electroplating process; and from a theory-based exploration of the use of dance in the film to an essay by an ecologist that recounts his own time spent tracking wolves. The concluding text takes a broad look at Barney's work, situating *Redoubt* in the context of his previous films and in relation to other artists' work, such as that of Alberto Giacometti and Robert Smithson. Taken together, the essays in this volume serve as a powerful catalyst for the intellectual expansion of *Redoubt*, functioning as a companion to the visual and physical expansion that the electroplates and sculptures represent.

Barney has noted that "a redoubt generally refers to a defensive military fortification, especially an isolated earthwork, or to a defense of a threatened social or psychological position," but that for him, "the term *redoubt* resonates as a description of a more abstract form of isolation or withdrawal."[25] The artist first started thinking about this word when, during the early stages of making this work, he became aware of the American Redoubt, an extremist movement in the region calling for a separation from government and urban life and a return to the land.[26] Central and southern Idaho are geographically isolated by the Rocky Mountains to the northeast and the High Desert to the southwest. Recalling the experience of living there in the 1970s and 1980s, Barney says that the isolation felt particularly significant and presented "a challenge for a teenager interested in finding out what was happening on the other side of the mountain."[27]

The portrait of central Idaho that Barney has created in *Redoubt* is one defined by tension and paradox: a place both beautiful and problematic, a place of both extreme destruction and regeneration, a place that urges and enforces utter isolation yet insists on the ultimate interconnectedness of the elements of nature and the shared stories that make up human experience. Just as the

Electroplater pursues her model of Lupus with such passion, Barney pursues his *Redoubt*, shaping the wolf stories of his youth into a narrative on a cosmological scale. His pursuit—for it is his, as he takes the role of the Engraver to hunt the animals, the forest, the hunters themselves—is a quest through which he transforms his subjects' stories from this world to that of the cosmos.

NOTES

1. Barney was born in San Francisco but moved to Boise, Idaho, in 1972; his family occasionally visited the Sawtooth Mountain region.
2. Matthew Barney, email message to author, September 4, 2018.
3. For these and other details surrounding the reintroduction of wolves to Yellowstone, see National Park Service, Yellowstone National Park, "Wolf Restoration," https://www.nps.gov/yell/learn/nature/wolf-restoration.htm (accessed September 22, 2018). The author also thanks Mamie Tinkler for providing research on the reintroduction of wolves to central Idaho. For an early account of the history of reintroduction and a discussion of the heated debates surrounding the topic, see John Rember, "Return of the Native," *Wildlife Conservation* 93 (September/October 1990): 61–76. See also the essay by Arthur D. Middleton in the present volume.
4. In 1980 Senator Frank Church of Idaho led the U.S. Congress to designate the Frank Church–River of No Return Wilderness area, which is today the largest contiguous wilderness in the continental United States, encompassing well over two million acres.
5. In 1991 Congress had appropriated funding for drafting an Environmental Impact Statement (EIS) on wolf recovery, a process that involved soliciting both public and agency comments. The EIS for reintroduction in Yellowstone and central Idaho received more than 160,000 public comments—the most on any federal proposal at that time. It was completed in 1994. See National Park Service, "Wolf Restoration." For a press release about the resolution of the public hearings, see Department of the Interior, "Final Rules Clear the Way for Wolf Reintroduction in Yellowstone National Park and Central Idaho," November 23, 1994, https://www.fws.gov/news/Historic/NewsReleases/1994/19941123.pdf (accessed September 23, 2018).
6. National Park Service, "Wolf Restoration." Given the strong divide within the state of Idaho regarding the reintroduction, the Nez Perce Tribe, or the Nimiipuu—a Native American people in central Idaho, as well as in northeastern Oregon and southeastern Washington—took the lead on managing the wolf recovery effort.
7. The 2010–11 season was the first full hunting season since the reintroduction. For a full history of the wolf's status on the endangered species list, see Erin Furman, "Detailed Discussion of the Gray Wolf's Change in Status on the Endangered Species List from 2005 to the Present," *Michigan State University College of Law* (2011), https://www.animallaw.info/article/detailed-discussion-gray-wolf%C2%92s-change-status-endangered-species-list-2005-present (accessed September 23, 2018).
8. Matthew Barney, email message to author, September 4, 2018.
9. For more on these projects, see Nancy Spector, *Matthew Barney: The Cremaster Cycle*, exh. cat. (New York: Guggenheim Museum, 2002); and Okwui Enwezor, *Matthew Barney: River of Fundament*, ed. Louise Neri, exh. cat. (Munich: Haus der Kunst, 2014).
10. For more on the myth of Diana and Actaeon, see Ted Hughes, *Tales from Ovid: 24 Passages from the Metamorphoses* (New York: Farrar, Straus, and Giroux, 1997), 97–103. Particularly

meaningful to the artist while conceptualizing the project were the paintings of the subject by Titian—*Diana and Actaeon* (1556–59) and *The Death of Actaeon* (ca. 1559–75), both in the National Gallery, London—part of a series depicting Ovid's *Metamorphoses* that Titian painted for King Phillip II of Spain.

11. Anette Wachter is a member of the U.S. National Rifle Team and the 2015 U.S. Palma Team. She has eight U.S. National Team Championships, three NRA National Records, and over twenty-five international trophies; see http://www.30calgal.com/about/ (accessed September 23, 2018). Seeking someone to play the role of Diana, Barney considered a number of competitive long-range rifle shooters rather than professional actors. When casting this role, he was primarily interested in skilled marksmanship; on-screen presence came second—"not secondary, but second," in Barney's words. In this regard, Wachter appealed to the artist, as her rifle training required her to be methodical and objective, an approach that lent itself to the neutral presence that Barney sought for the characters in the film. Matthew Barney, telephone conversation with author, October 9, 2018.

12. Barney worked with Eleanor Bauer on *River of Fundament*; for more on her work, see https://goodmove.be/B-I-O-C-V (accessed September 23, 2018). Barney and Bauer were already working on *Redoubt* when Laura Stokes was cast. They were seeking a complement to Bauer's character and began to look at the lanyard climbing that arborists use, which led them to consider whether they might find an aerialist for the film. Bauer knew of Stokes through her contemporary dance and choreographic network. Matthew Barney, telephone conversation with author, October 9, 2018. For more on Stokes, see https://www.laurastokes.com (accessed December 8, 2018).

13. K. J. Holmes is an independent dance artist, singer, poet, and actor who has helped define many contemporary improvisational and somatic practices. For more on her work, see http://www.kjholmes.info/about/ (accessed September 23, 2018).

14. Barney found Sandra Lamouche's work through videos that she had posted online; see https://www.sandralamouche.com (accessed October 22, 2018).

15. For Lamouche on the significance and symbolism of the hoop dance, see https://www.sandralamouche.com/blog/infinite-wisdom-of-the-hoop-dance (accessed December 2, 2018).

16. Matthew Barney, telephone conversation with author, September 5, 2018.

17. Ibid.

18. Ibid.

19. For more on the use of dance in the film, see the essay by André Lepecki in the present volume.

20. Matthew Barney, telephone conversation with author, September 5, 2018. The camouflage worn in the film is by Kryptek, MultiCam, and A-TACS Camo.

21. Bepler worked with Barney on the *CREMASTER Cycle* and *River of Fundament*.

22. For more on the plates, see the essay by Elisabeth Hodermarsky in the present volume.

23. For more on Cosmic Hunt myths, in which an animal is pursued or killed and then changed into a constellation, see Julien d'Huy, "Scientists Trace Society's Myths to Primordial Origins," *Scientific American* (December 2016): 64–69.

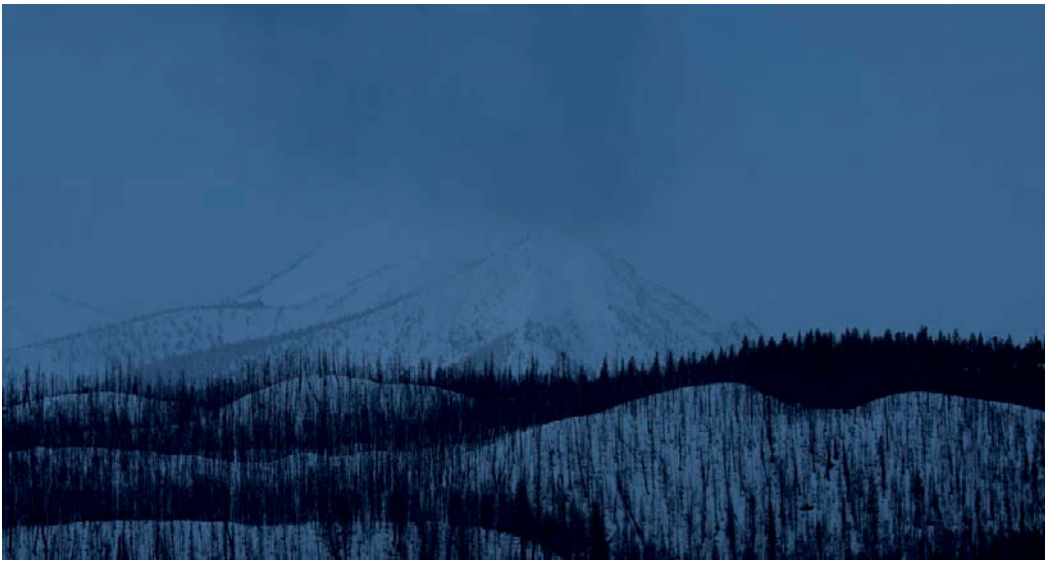
24. Gifford Pinchot graduated from Yale University in 1889, and in 1900, at his urging, his family endowed the two-year postgraduate program in forestry, establishing what is now known as the Yale School of Forestry and Environmental Studies.

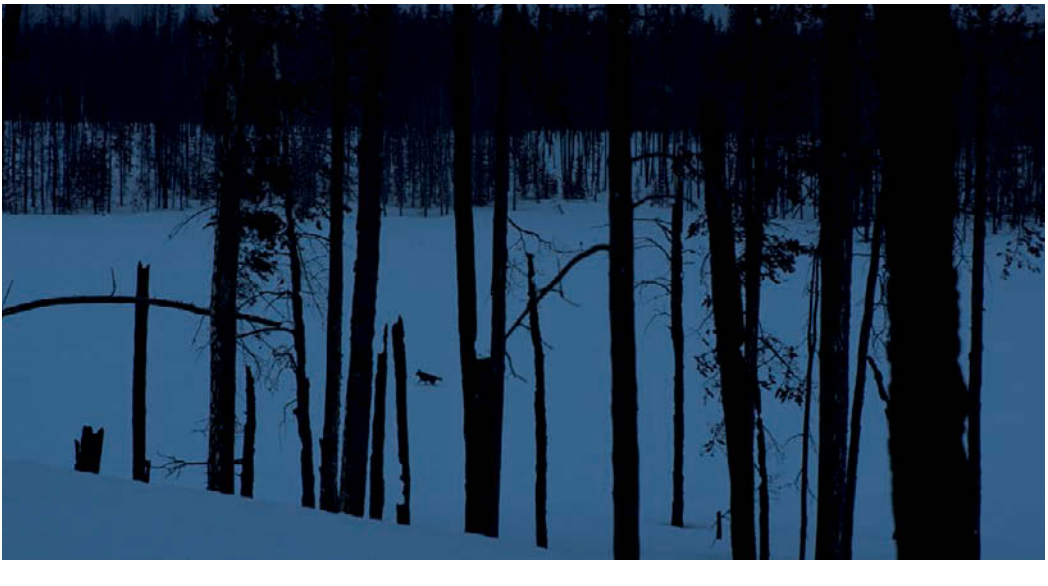
25. Matthew Barney, email message to author, September 4, 2018.

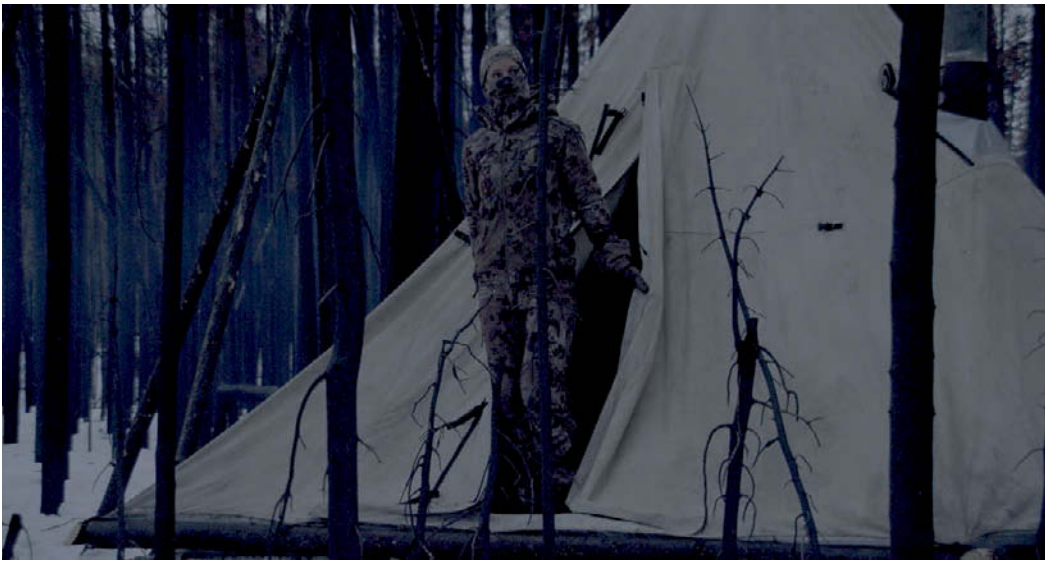
26. For more on this group, see Kim Murphy, "The American Redoubt, Where Survivalists Plan to Survive," *Los Angeles Times*, February 8, 2012, http://articles.latimes.com/2012/feb/08/nation/la-na-american-redoubt-20120209; and the organization's website at https://americanredoubt.com/ (both accessed October 8, 2018).

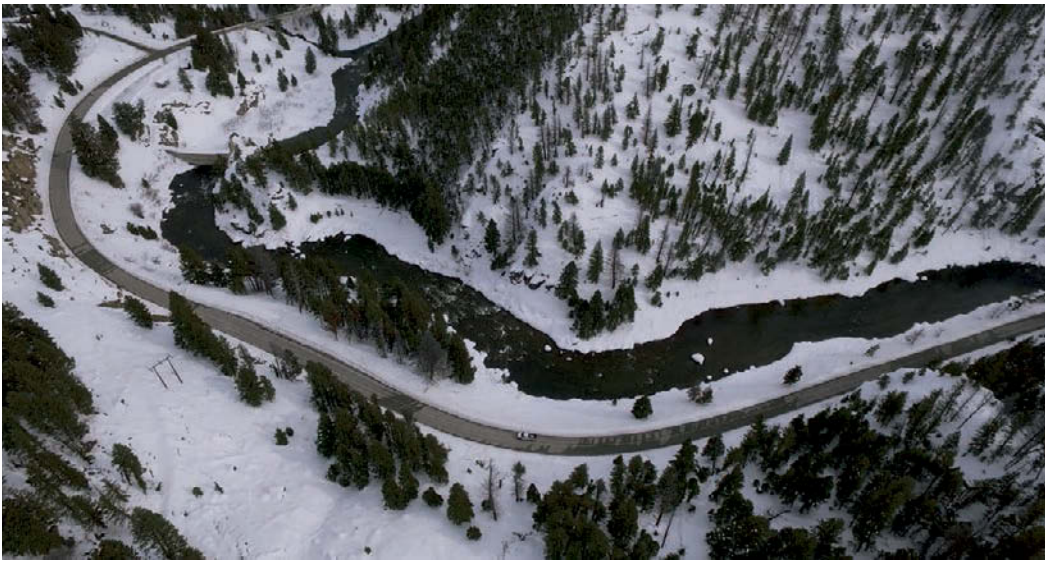
27. Matthew Barney, email message to author, September 4, 2018.

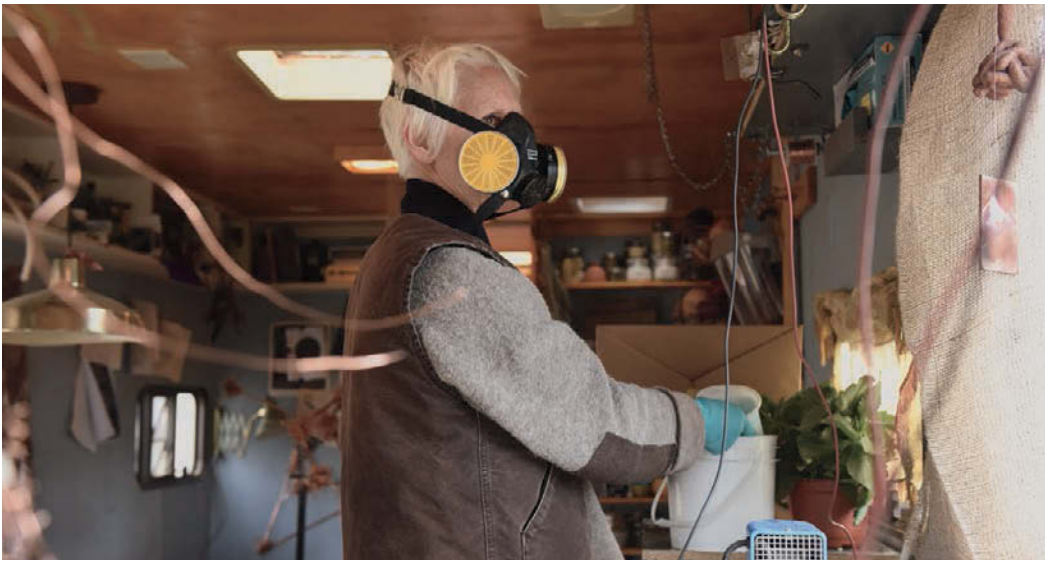
REDOUBT



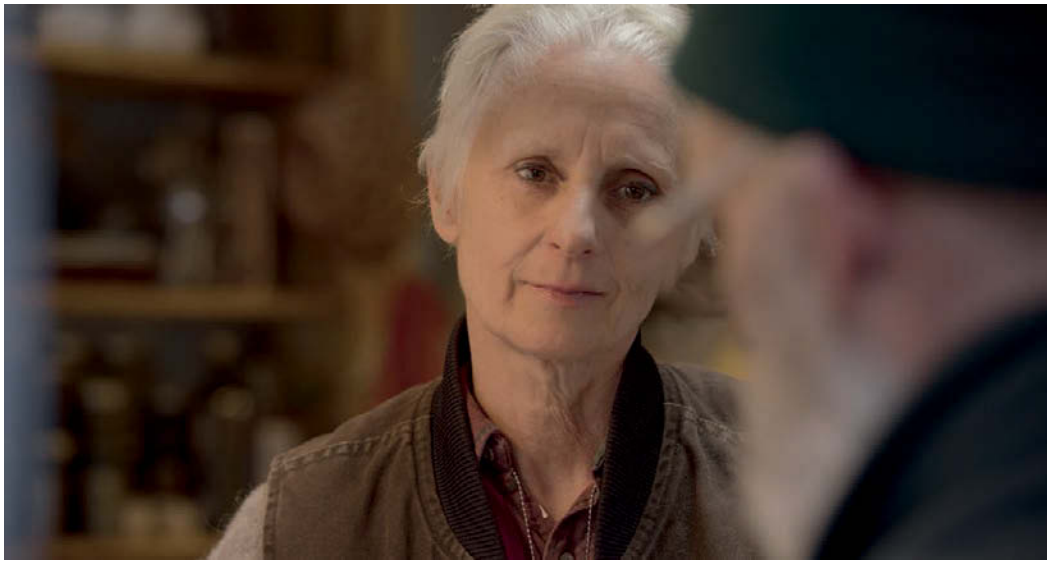


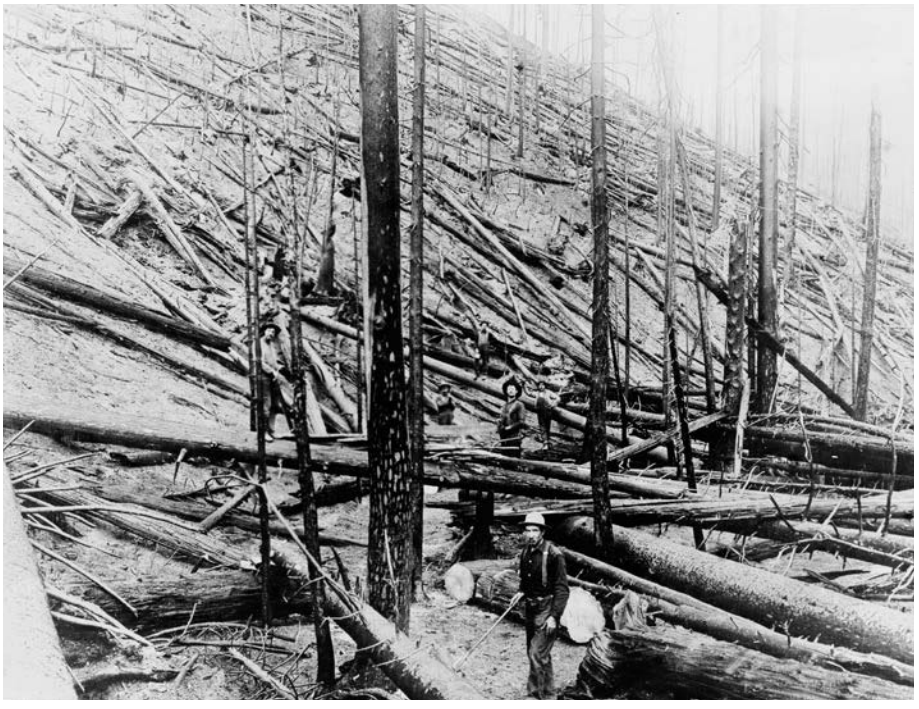






OF WOLVES AND MEN
BARRY LOPEZ
Sensing, Feeling, and Action
COSMIC VIEW
MYTHOLOGY
Home





Result of hurricane and fire in a heavy stand of Idaho white pine on the Little North Fork of the St. Joe River, Coeur d'Alene, Idaho, ca. 1909–32. Library of Congress, Washington, D.C., National Photo Company Collection

THE RELATION OF FORESTS AND FOREST FIRES (1899)

Gifford Pinchot

Editor s Note: *Gifford Pinchot was Chief of the Division of Forestry from 1898 to 1905 and Forester of the U.S. Department of Agriculture from 1905 to 1910. This essay was originally printed in October 1899 in "National Geographic." Illustrations herein have been chosen by Matthew Barney for the present publication.*

The study of forest fires as modifiers of the composition and mode of life of the forest is as yet in its earliest stages. Remarkably little attention, in the view of the importance of the subject, has hitherto been accorded it. A few observers who have lived much with the forest, such as John Muir of California, have grouped fire with temperature and moisture as one of the great factors which govern the distribution and character of forest growth; but so little has been said or written upon the subject that the opinion of each man seems to have been reached independently and upon the single basis of personal observation. The documents upon the subject still reside, with very few exceptions, in the forest itself. It is unfortunate that our acquaintance with what might also be called the creative action of forest fires should be so meager, for only through a knowledge of this relation and through the insight which such knowledge brings can there be gained a clear and full conception of how and why fires burn, and how they may be prevented or extinguished.

The records of past fires, written in the forest now on the ground, are often decipherable for a hundred years back, and in many cases for more than twice that length of time. Such records throw light on the relations of forests and fires as nothing else can, and are consequently the most valuable of all documents upon the somewhat intricate but most important question of the final effect of fire on the forest; for we must clearly realize, before the present subject can fall into its proper sequence, that we have not stated everything when we say that "a given forest is destroyed by fire." The forests which the first white explorers saw as they landed on this continent and gradually overran it were themselves the successors of others, which, through thousands of years, were burned down at intervals that we can no longer trace. There is but little of all of the vast forest area of this country which does not bear, either in actual

scars and charcoal or in the manner and composition of its growth, the marks of fire, and indeed it is more probable that further investigation will greatly narrow the limits of those portions which may now seem to have been exempt.

That fires do vast harm we know already, although just what the destruction of its forests will cost the nation is not known. Records compiled by the Division of Forestry indicate that the average direct recorded loss from this source is not less than $20,000,000 a year. To this figure must be added the vast direct loss unrecorded, together with a great but indefinite damage from the effect of forest destruction on water supply, and other losses of immense importance, the deterioration of the soil, the destruction of the young growth, and the loss of the increment which a healthy young forest would have been laying on year after year. With further study a more exact statement of the grand total of the loss will be possible; but even now it is safe to assume that for the nation as a whole the loss is represented yearly by a sum much in excess of $50,000,000. That figure sufficiently proves that the destructive action of fire on the forest in relation to human needs is a subject of the first interest and importance; but in the present paper this brief reference must suffice. The regulative action of fire on the forest is here more directly in question.

Fires determine the presence or absence of forest in a given region far more generally than is often supposed. A very large part of the prairie regions of the United States is treeless probably because of fire. Such evidence as we have points strongly in this direction, and in addition the behavior of the border forest lands along the eastern edge of the prairies powerfully confirms this view. Where such forest lands have been protected from fire, as they have very largely through the progress of settlement, young trees have usually sprung up in great numbers under or between the scattered veterans which had survived the fires, and dense and vigorous young growth stands ready to replace by a heavy forest the open park-like condition which the fire had created and maintained. The well known "oak openings" furnish an excellent case in point. In a similar way and for similar reasons trees are spreading from the borders of streams in the prairies to the grasslands nearby. Such indications as these, joined to the occasional discovery of evidences of former tree growth out on the prairie, where trees no longer grow, go far to prove that trees once grew and may grow again much beyond the limits they occupied when the white man first entered the country. That fire was a restraining cause admits of no doubt whatever, and that it was the principal cause over vast areas is altogether probable. One set of facts which may ultimately be used to establish this latter contention is found in the positions chiefly or exclusively occupied by trees in semi-arid regions, which positions are either along water-courses, and so shielded from fire by moisture, or on rough and stony ground, and so

Fig. 1
Aerial view of smoke and flames from the Druid Complex Fire, Yellowstone National Park, Montana, August 19, 2013

protected by the absence of enough grass or other vegetable groundcover to carry a destructive flame.

The same course of reasoning applies to certain kinds of open glades or prairie, well named "fire-glades" by Mr. Frederick V. Coville, Botanist of the U.S. Department of Agriculture. In the Black Hills of South Dakota, for example, these glades, surrounded by forest-bearing land, are almost exclusively confined to ground rich enough to support a crop of grass sufficiently dense to burn fiercely, while the timber is restricted to rough rocky or stony land, almost always higher than the glades and comparatively safe from fire because of the scantiness of minor vegetation it is able to support.

In semi-arid regions where fire-glades of this kind occur, there is an interesting alternation, by years or series of years, of the presence or absence of the moisture which makes forest reproduction possible. In the same way the occurrence or absence of burning gives or denies the opportunity for young seedlings to reach a size at which they are reasonably safe from the attacks of ordinary surface fires. It must be clearly borne in mind that it is only the average effect of the class of causes of which fire and rain are the chief of which we are concerned. Young trees sometimes succeed through combinations of temporary immunities in establishing themselves in the midst of fire-glades of old date, and the rocky refuges where some seedlings usually escape the fire are not uncommonly burned over, as the fire-scarred trunks abundantly testify. But these facts do not obscure the effective working of the averages, although they do tend powerfully to lengthen the time required for the average to work itself out. Thus reproduction around the fire-glades of the Black Hills is extremely slow.

Perhaps the most remarkable of the regulative effects of forest fires relates to the composition of the forest—the kinds of trees of which it is composed and the proportion of each. This effect depends on the action of fire in combination with the various qualities of resistance which trees possess. These qualities are of two chief kinds; one, adapted to secure the safety of the individual tree directly through its own powers of defense, the other to assure the continuance of the species, with little regard for the single tree. An example of the first kind is the western larch, whose enormously thick bark is almost fireproof, and so good a nonconductor that it protects the living tissue beneath it even against fires hot enough to scorch the trunk fifty or seventy-five feet above the ground. It is to this quality of their bark, as well as to their marvelous vitality, that the big trees of California owe their power to reach an age of three thousand or four thousand years. The eastern pitch pine protects itself in the same way. So do many other trees, including the longleaf pine, which adds to this quality of its bark another method of protection that places it at the head of all the trees of my acquaintance in its capacity to resist fire.

Almost all trees yield readily to slight surface fires during the first ten or fifteen years of their life. To this statement the longleaf pine is the conspicuous and rare exception. Not only do the young trees protect themselves in early youth by bark which is not uncommonly as thick as the wood (the whole diameter being thus two-thirds bark and one-third wood), but add to this unusual armor a device specially adapted for their safety when growing amid long grass, usually a most fatal neighbor to young trees in the case of fire. It is to be noted that the vast majority of longleaf pines are associated with grass from the beginning to the end of their lives. During the first four or five years the longleaf seedling reaches a height of but four or five inches above the ground. It has generally been erroneously assumed that this slow growth made it specially susceptible to injury from fire; but while the stem during these early years makes little progress, the long needles shoot up and bend over in a green cascade which falls to the ground in a circle about the seedling. Not only does this barrier of green needles burn only with difficulty, but it shades out the grass around the young stem, and so prepares a double fire-resisting shield about the vitals of the young tree. Such facts explain why the fire, which has restricted the spread of evergreen oaks in parts of Florida, for example, has made a pure forest of pines in a region where the reproduction of the oaks is phenomenally rapid wherever the annual fires cannot run.

The second method of protection against fire is that which sacrifices the individual but secures the safety of the species. Perhaps the most striking example of this method is furnished by the lodgepole pine, which is being distributed over hundreds of square miles in the Rocky Mountain region by the action of fire. It is a fact that this thin-barked tree, which succumbs with the utmost readiness to fire, is gaining ground by the action of its enemy, replacing over great areas thick-barked species like the red fir [now known as Douglas fir] and the western larch. The device to which this curious result is due is similar to that of *Pinus attenuata* [knobcone pine], to which John Muir long since called attention.[1] It consists in the hoarding for several years of the ripe seeds in the cones. Fire rarely burns down the lodgepole pine, but in nearly every case simply kills the standing tree and leaves it to be blown down years after when decay shall have weakened the roots. In the meantime the hoarded winged seeds are set free by the opening of the cones, are distributed, and germinate, and the new crop contains a larger proportion of lodgepole than the old. By the repetition of this process great stretches of burned land are finally covered with a pure even-aged young growth where formerly the forest was composed of other and usually more valuable species. The details of the return process by which the more valuable species will undoubtedly in the end regain possession of the soil I do not yet know.

Fig. 2
Firefighters watch as an air tanker drops retardant while battling the Ferguson Fire, Stanislaus National Forest, near Yosemite National Park, California, July 21, 2018

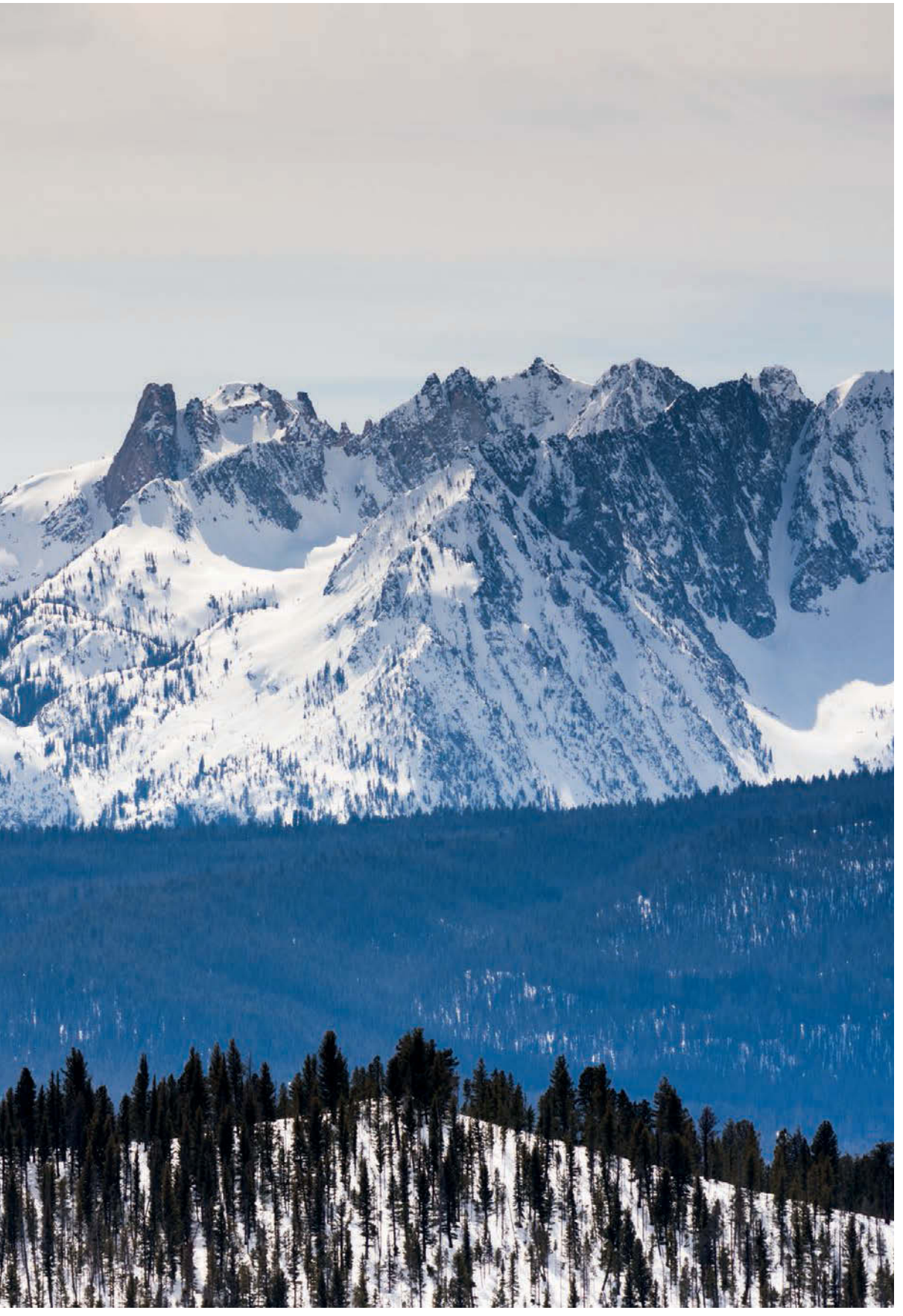
A somewhat less obvious, although not less interesting, instance of distribution controlled by fire is that of the red fir in those proportions of Washington (and presumably of Oregon also) where it reaches its best dimensions and greatest commercial importance. Here the young seedlings are found in remarkable abundance on unshaded spots wherever the vegetable covering of the mineral soil has been burned away. An actual count and measurement of every tree on many hundred acres of fir timber in various parts of the Puget Sound region, and a study in the Olympics, combine to show them practically absent in the shade of their elders. In the latter region, as I had occasion to say in a report (dated January 26, 1898) to the Secretary of the Interior on the condition and proper management of the national forest reserves, "Continuous stretches of miles without a break were covered with a uniform growth of red fir from two to three feet in diameter, interspersed with numerous rotting stumps of much larger trees bearing the marks of fire. The young firs were entirely unscarred, but charcoal was found in the roots of the specimens which had been thrown by the wind. . . . Charcoal was found directly beneath a growing cedar tree four feet in diameter, under which a hole had been excavated in the course of lumbering operations. This mass of evidence acquires a crucial importance with relation to the forest from the act that in my ten days' visit to this region I did not see a single young seedling of Douglas fir (red fir) under the forest cover, nor a single opening made by fire which did not contain them." In a word, the distribution of the red fir in Washington, where it is by all odds the most valuable commercial tree, is governed, first of all, so far as we know at present, by fire. Had fires been kept out of these forests in the last thousand years the fir which gives them the distinctive character would not be in existence, but would be replaced in all probability by the hemlock, which fills even the densest of the Puget Sound forests with innumerable seedlings. I hasten to add that these facts do not imply any desirability in the fires which are now devastating the West.

These examples of the relations of fire and the forest are cited because they are conspicuous among the few which have already been worked out. Without question a number of relations of vastly greater importance remain to attract and reward the student of this branch, one of the most fruitful and fascinating of all the fascinating and fruitful branches, of forestry in the United States.

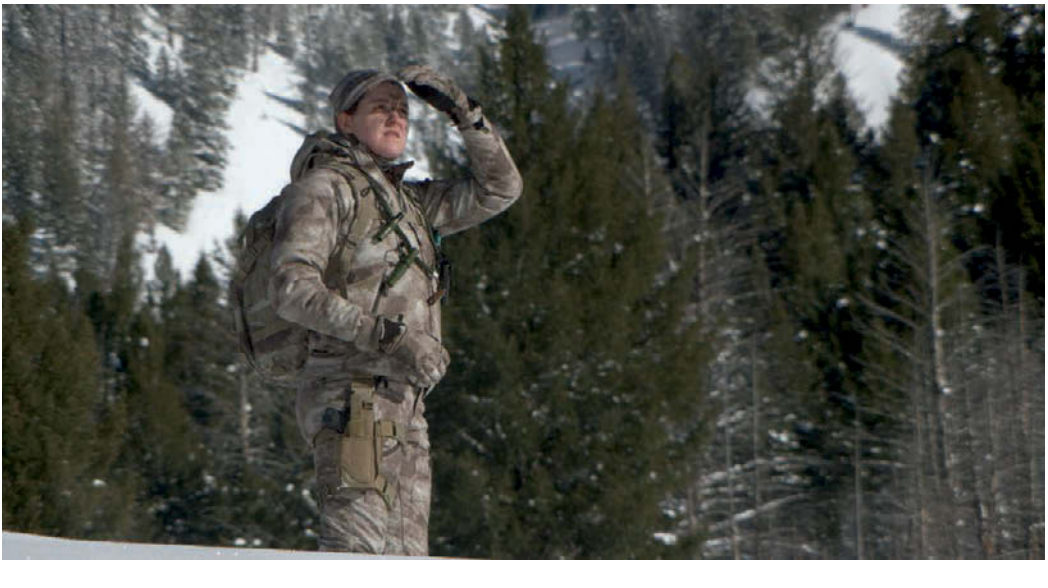
NOTE

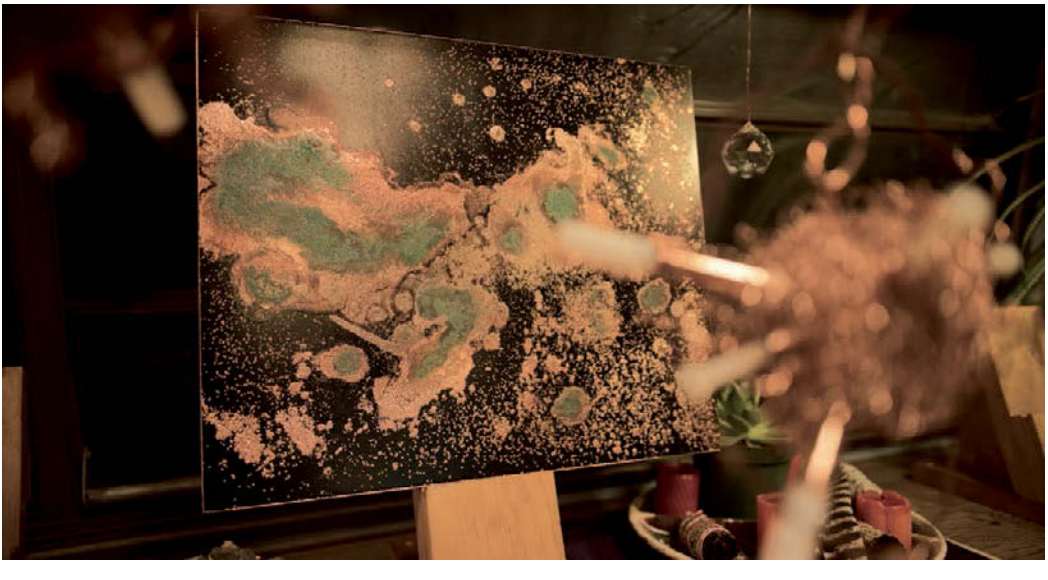
1. See John Muir, *The Mountains of California* (New York: Century, 1907), 151.

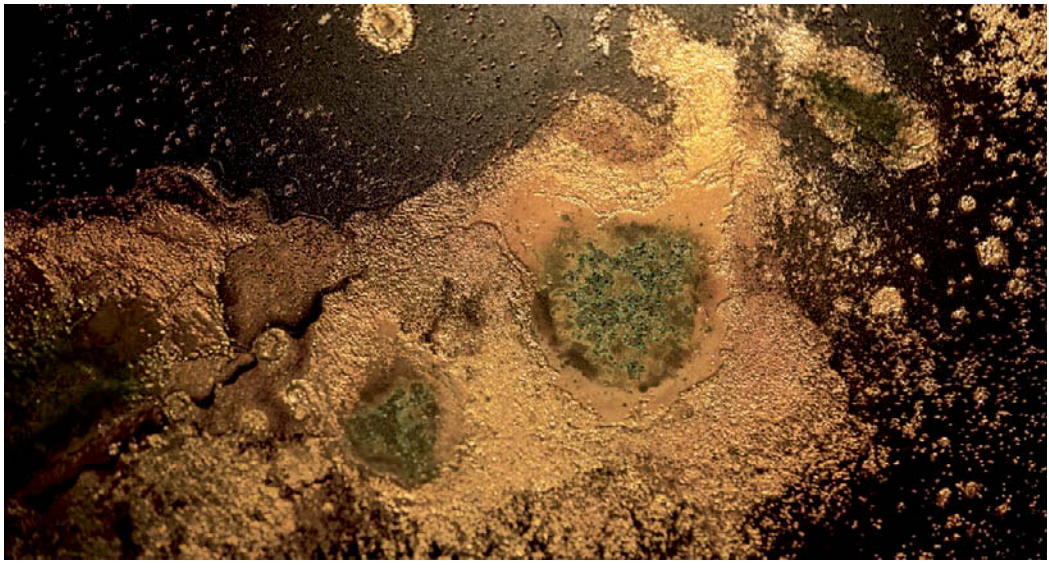
HUNT 1

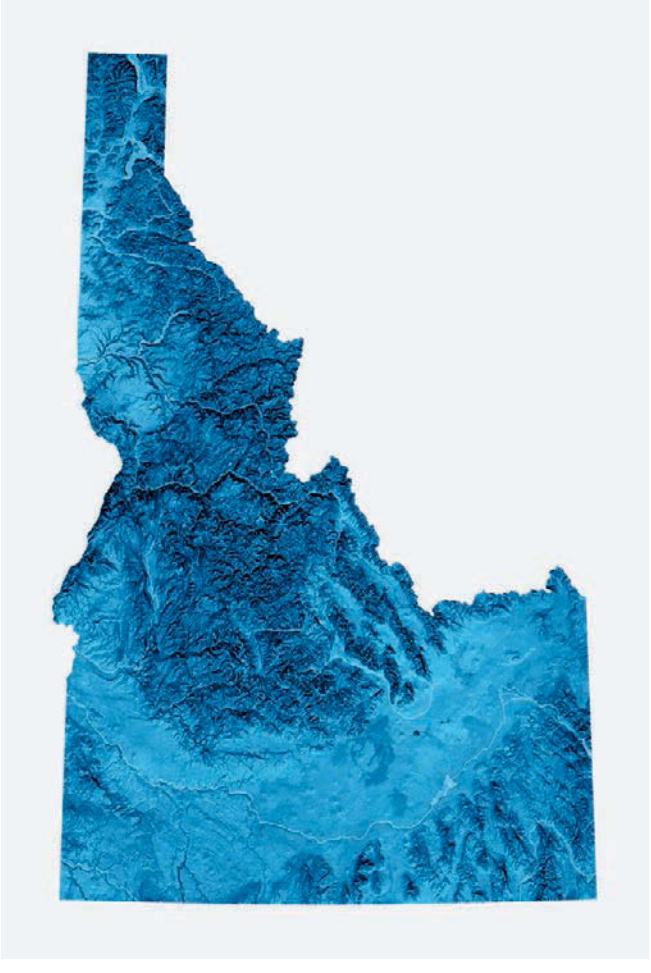


620 CAL .30 CARTRIDGES









Topographical map of Idaho

MAPS OF SAWTOOTH VALLEY

John Rember

It's a green, lake-filled valley in the middle of a state that is mostly desert, isolated by mountains and winding river roads, separated by dry distance from cities and farms, insulated from the hot Idaho summers until the highest peaks lose their snow.

The seasons whipsaw between fire and ice. Avalanche paths and fire scars mark the valley walls. If you live here, you learn to accept change, some of it abrupt. Some days the place becomes unfamiliar, even when you have a map.

Old Maps

The Salmon River, dammed by glaciers, once formed a twenty-by-fifty-mile lake here. Now, the valley floor is a high, grass-and-sagebrush-covered deposit of glacial till, marked by roads and buildings and fences, surrounded by ten-thousand-foot peaks.

The White Cloud Mountains rise up east and the Sawtooths west, the Smokies south, and the Tango Peaks, part of the jumbled Salmon River Range, north. The river carves the old lake bottom. It's a long, narrow string of rapids and shallow holes, bounded by scrub willows and gravel bars, marked by the light footprints of deer, elk, and wolves. You can see the terraces of ancient beaches on brushy hillsides a hundred feet above the river, if you know where to look.

By a bait-and-switch trick of time, the terraces transform into Cold War artifacts. In the 1950s, when the Soviet Union and the United States had competing body-image disorders, they both drew up blueprints for nuclear-powered bombers and intercontinental tunnel-boring machines. They also made competing plans to reverse the rivers that fed the Arctic Ocean. Russian rivers would be pumped south into desert Kazakhstan, and Canada's Mackenzie River would be rerouted to desert Los Angeles.

Sawtooth Valley's glacial lake was to be fully restored by a dam where the Salmon River narrows below the town of Stanley. A string of nuclear plants would supply power to pump water from the low-lying Canadian

Fig. 1
The Milky Way core above Mount Heyburn, Redfish Lake, Idaho, 2016

Arctic into the repaired bowl of the valley. Water would then flow downhill, through giant aqueducts built high over basalt canyons and deep under Nevada mountain ranges, until it reached the lawns and swimming pools and farms of southern California.

You know this didn't happen. You know lots of things didn't happen during the Cold War, else you wouldn't be here. But you know that it was a war that abnormalized almost everything you see, even ancient hillside terraces.

Once you wanted to study nuclear physics. Once you wanted to find a nice warm cave and stock it with canned goods and bottles of water.

A hundred miles by air from Sawtooth Valley, a huge hangar sits on the broken lava of southern Idaho. It was built to house a nuclear-powered bomber, never produced, obsolete long before production. There may be an airplane in there, or parts of one. Lots of secrets out there in the desert.

There are similar abandoned facilities in Siberia. Intercontinental missiles were faster and cheaper, and fit better with Cold War dreams of a lone survivor starting over in a blackened Eden.

You see yourself as that survivor.

You walk outside and look at the ancient beaches on the foothills across the river, and discover it's not a safe thing to do. Looking into the face of deep time is like discovering a divinity dancing naked in a forest clearing. By the time she notices you back, you're dead of old age.

Climate Maps

You can still find ancient ice in the shadows of the high peaks of the valley, under broken rock and sand. But much of it has melted in the last few decades. High ponds once rimmed by vertical walls of ice have disappeared, leaving deep rocky holes in the talus, their walls steeper than the angle of repose. Climb down in them to see what is at the bottom of the missing ten thousand years of ice and you risk tipping off a rock, that tips off a bigger rock, that tips off an even bigger rock, that tips off onto you. In the ruins of an old glacier, you don't always have to wait for old age to die. Negative space can kill you, too.

The valley is green in the early summer, smoke-colored from mid-July to October, and shades of greenish-gray from the first snowfall until May.

Chinese coal plants make the sky above central Idaho a softer blue than they were before the coal plants were built. You enjoy sunsets that are red, hazy, and full of light. They last a long time on warm summer evenings.

The mountains crop your view of the clouds, the stars, and the sunsets. You can imagine that the world ends at the horizon. You do understand that a larger world is out there somewhere, but trips outside the valley take on the nature of dangerous hallucination.

Chamber of Commerce Maps

Highway 75 comes into Sawtooth Valley from Ketchum, meets Highway 21 from Boise in Stanley, then disappears downriver toward Challis. These are the only two roads that connect the valley with the outside world. Both have been designated scenic highways.

By June, the meadows are green and flowering, and full of running water below still-white mountains. From behind your steering wheel, you can see spring-dancing animals, small and large. Geese. Sandhill cranes. Bluebirds. Woodpeckers. Antelope. Deer and elk.

But also: Beer trucks. Tourists. People who sell food and lodging to tourists. People who play music for tourists. People who, for a price, guide tourists to places where they tell them there are no tourists.

Whether or not you're a tourist is an important distinction in the valley. Sometimes you think that everyone except you is a tourist, or is at least following one of the maps available at the Chamber of Commerce kiosk—which likely means one or the other of you is lost.

The map is not the territory.

The peaks start casting long shadows in November. The air gets cold and unforgiving. The lakes ice over. You're grateful that the map doesn't want to freeze you to death, too.

The days become rituals of shoveling snow, packing in firewood, driving to town to check the mail, or climbing up the hills across the road and skiing back down. You spend five minutes warming up the snowblower's carburetor with a hair dryer, and it still won't start. You pull its spark plug, shine the contacts with a nail file, and mutter curses from other winters. One of these three does the trick.

Some days you don't even need a map, except for the one in your hippocampus. You know the path to the woodpile. The highway is visible from your front door. The highway leads to town. There is usually mail in your post-office box, even if it's only supermarket flyers.

An epiphany: if the map were the territory, you could eat supermarket flyers, which are food maps. As it is, you can use them to start the woodstove.

The slope across the road leads to the rock-strewn tops of hills, blown free of snow by the cold winds that signal the tail end of storms. You need skis to get up there, and when you come back down you need to know how to keep from falling and hurting yourself, because it's a long way back to a warm house, and the local EMTs can't always get to places snowmobiles can't go. You learn to read the downslopes, staying in the drifts on the windward sides of ridges in low-snow years, avoiding them when the snow is deep because sometimes a slab avalanche will break between your feet and you have to dive for the part of the snow that's staying and not the part that's leaving. If you miss, you slide downhill between great rotating blocks of snow, and you hope that when everything stops, you're on top of the snow and not under it.

Deadfall is a problem in winter. Dead trees do not always make it all the way down. Their branches hold their trunks six feet off the ground. They fall on other dead trees. You can't crawl under them or climb over them. When you go around them you run into other downed trees. Take your skis or snowshoes off and your feet will plunge into the dirt.

You turn around and ski back to a place where the trees are still living and safely upright, or where there aren't any trees at all. A downed tree is one more time that the territory announces that it isn't the map. A downed tree is hard evidence that your plans count for less than you thought they did. Hiking in the winter teaches you not to trust maps constructed in the summer.

Fire Maps

Summers in the valley have become dryer and hotter in recent decades, and snow has melted earlier. You can depend on smoky skies in August and September, and lately, in the first half of October. National Forests are in the process of becoming National Grasslands, or National Sagebrush Vistas, or National Charcoal and Sand Preserves.

The U.S. Forest Service has realized that its Smokey the Bear–era policy of putting out forest fires within twenty-four hours created giant flammable artifacts, enormous accumulations of dead timber and thick brush, all across the American West.

When these deadfall-choked forests catch on fire, they are capable of temperatures that sterilize the soil for decades. Everything burns but the rock the forest rests on. The soil loses its ability to retain moisture, and less moisture falls from the sky. Dust and ash blow where trees once stood, and you remember that forests grew where the Sahara is now.

A hundred years of fire suppression in Sawtooth Valley has created areas in the foothills where you can walk for five miles on downed trees without ever putting a foot on the ground.

Maps of the Dead

The old property records in the county courthouse hold the names of Fleming, Williams, Laneer, Lee, Pearce, Decker, Shaw. You've seen the same names in the small private cemeteries that stand on the ancient lake terraces, far enough above the valley floor for a nice view of the peaks.

These are the names of the original homesteaders in the valley, but none of them grace the tax rolls any longer. Their children, captive in close quarters through the long winters before the roads were reliably plowed, left as soon as they could.

The homesteads were a dream of new lives in a harsh but beautiful climate, a new start that required only courage and endurance. Today, you can see that dream in the old homestead cabins restored by new owners. They have the delicacy of undisturbed ash, holding the form but not the substance of the originals.

Before the homesteaders: the Indians, who visited the valley for summer salmon, back before salmon were domesticated. You have gathered arrowheads from the old sheep trail across the river. Back when sheep moved along the sheep trail to summer pastures, their hooves pounded vegetation

to dust, and every summer rain would expose new glints of obsidian and sculpted agate. You can still find flaked chips, if you wander the hillsides above the water—now thick with half-grown lodgepole, planted in Forest Service restoration projects back when they had field hands—and pick through the mounds left by ground squirrels, who have made homes in the debris of the disappeared.

Also before the homesteaders: miners. In the ruins of mining towns—Old Stanley, Old Sawtooth City, Vienna—you can find bits of old glass and flakes of rust, and sometimes the rotted remains of cabins, roof nails poking out of strips of twisted roof flashing. Bottle hunters have dug through the sites of old garbage dumps, and old ore carts, winched into pickup beds, have ended up in lawn dioramas in Boise and Twin Falls.

You remember a trip to the Old Sawtooth City Cemetery as a child, with your grandfather. You saw the fragments of old dresses on piles of dirt beside fallen wooden headstones. Grave robbers had dug down to search for silver dollars rumored to have been placed on dead eyes—grossly overestimating the disposable income of the grieving in a dying mining town.

You also remember, as a child, accepting this act of desecration as a normal part of the adult world you would enter someday. Your grandfather, about to enter a different world, was not so even-tempered about it. Listening to him rant, you gave up thoughts of becoming an archaeologist.

In the Stanley Cemetery, the graves are kept up and some of them are graced with flowers on Decoration Day. A fence surrounds the graves. People you know are buried there, and you remember stories—a cuckolded husband's suicide, a man just back from the state prison, broken and dying, an overdose, an unmarked grave of a murder victim—that you cannot tell in the bars in Stanley. Families in the valley still have disgrace in their pasts, and pitfalls can open up in casual conversation.

You point, driving by: "There's a body buried under that tree." You say it aloud before you realize it, even when you're the only one in the car.

Other people point at different trees.

Mushroom Maps

The summer after a forest fire, the burned places that still hold organic matter see the sprouting of fluorescent green grass and morel mushrooms. You have spent much of your life looking for morel mushrooms. You don't believe the people who tell you that they are hallucinogenic, at least not in normal amounts.

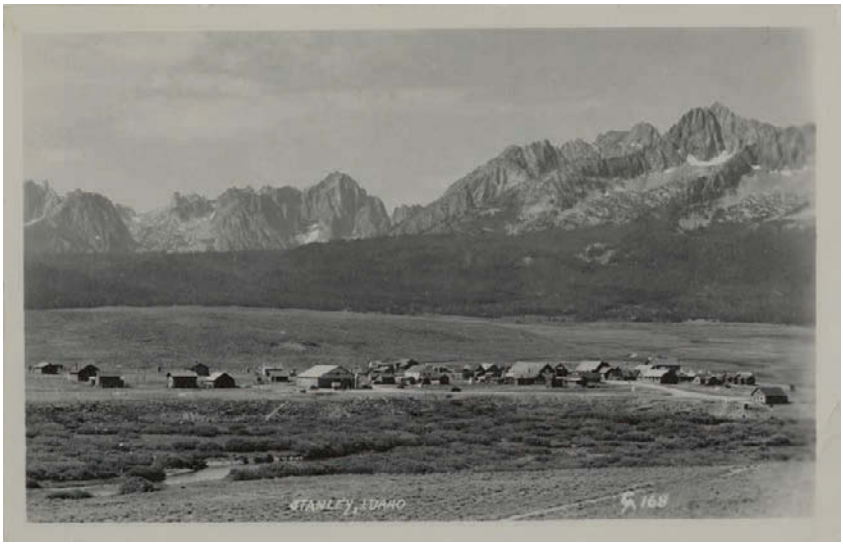


Fig. 2
Postcard of Stanley, Idaho, with the Sawtooth Mountains in the background, ca. 1930–40. University of Idaho Library Special Collections and Archives, Moscow, Idaho, Postcard Collection, inv. no. PG 9_01-13c

Fig. 3
Fire morels growing in the Pacific Northwest, 2013

Yet you wake at 4 a.m. after a huge dinner of morels and many bottles of wine, hearing sounds like a shortwave radio being tuned up and down the wave band. You wake further. No one is tuning a shortwave radio you've hidden under the floorboards. You're not an OSS operative in occupied France in 1942, even though the French have a weakness for morels. You don't even know French, which means you need a translator, a clear security risk.

Your mission, should you choose to accept it, is to find morels in the ashes. You haven't armed yourself with a .45, a boot pistol, and a knife, like many of the mushroom hunters you meet. Being unarmed and having a good cover story is your strategy in the event that you're captured. A smile, a shrug, a walk in the woods. That's all you're up to. It will work, provided your translator doesn't *vendre la mèche*.

On your best days, you find ninety pounds of morels. You drop them in stews. You sauté them and cover steaks with them. You put them in omelets where they outbulk the eggs. You mix them half-and-half with salty, buttery pastas.

You dry them on agricultural netting tied to the corner of the fence in your backyard. It takes a couple of days, and then you pour them into cotton mesh bags and leave them on your deck for a final dehydrating afternoon. Eight pounds of fresh morels results in one pound of dried morels. Dried morels last indefinitely. Put them in stews for a slow, warm rehydration, or grind them up in an old coffee grinder and use them as a pungent spice that imparts a finish of burned trees and heat-powdered rock.

You find morels depending on the patterns of rain and sun, the size and moisture content of creek-bottom gravels, and the shadows of charcoaled logs half-sunk in moss. You realize as you search in more and more places and in conditions more and more varied that morels are where you find them. Over time, your map buries the territory under detail, and none of that detail will tell you what you will find in next summer's burn. Past performance is no guarantee of future earnings where morels are concerned.

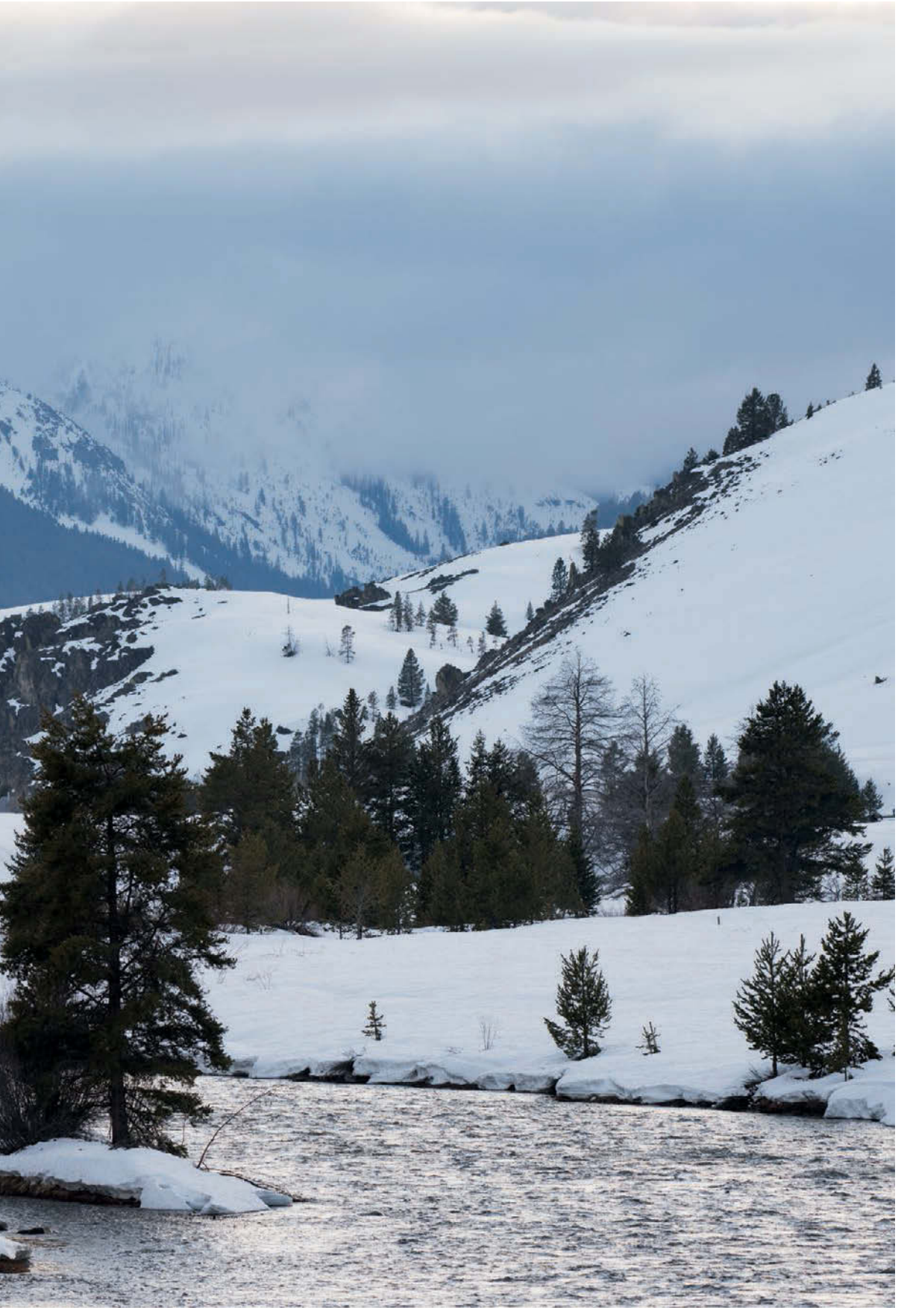
You find things that you're not looking for, mostly old iron: The broken tops of wood cookstoves propped up on rocks above firepits. Bed frames. Horseshoes. The heads of shovels and axes, their handles burned away. The bodies of rusted cars, trapped at the ends of abandoned roads full of blackened and bent saplings. Now and then, tent stakes flecked with melted nylon. Frying pans. Hobnails. Butcher knives, handle-less. Heat-twisted kitchen chairs, backless and seatless. Old wheels, tireless.

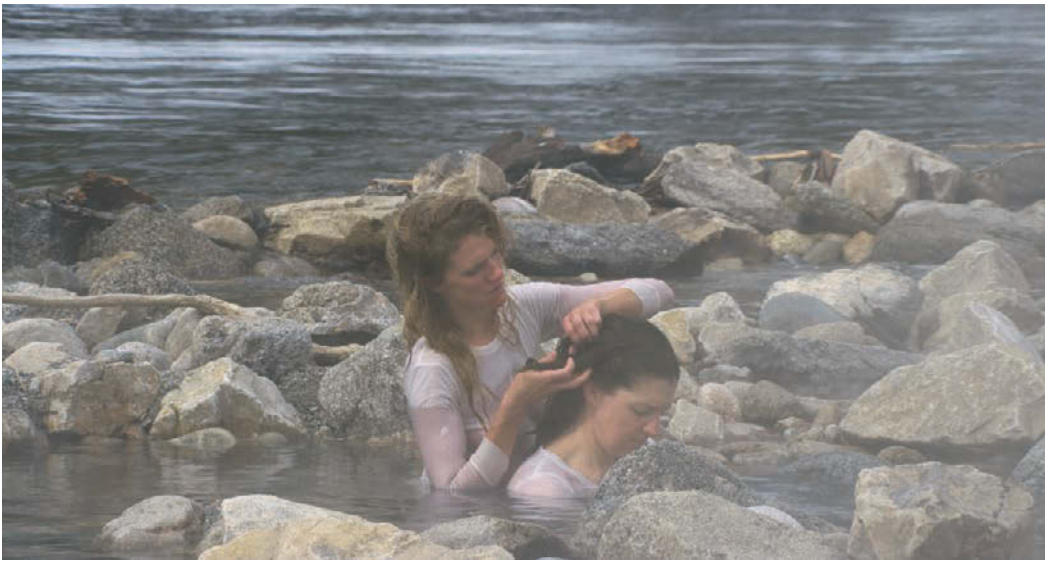
It's an entire museum of found objects, ones lost or left behind by people who tried to make the forest a home, at least for a summer, while they waited tables in Stanley, or cut timber for long-closed sawmills, or hid out from in-laws or outlaws or plain old laws. They evoke souls long gone from Sawtooth Valley. On days the mushrooms are hard to find, those souls offer their bits of iron across decades and even centuries. They are gifts that bestow solidity. Solidity is more valuable to you than you wish it were. When you find it, there's a kind of joy in it.

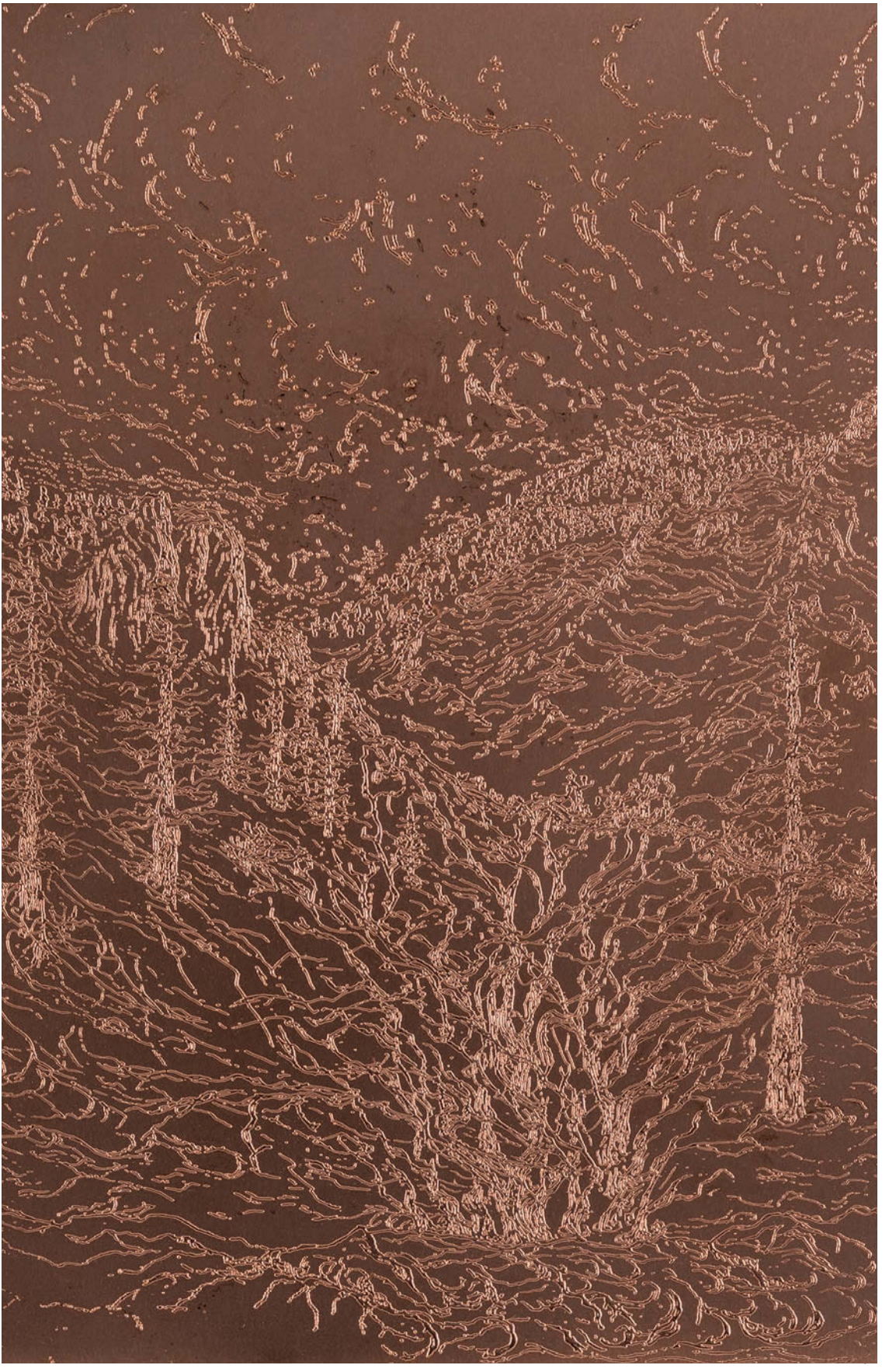
Authentic Maps of Sawtooth Valley

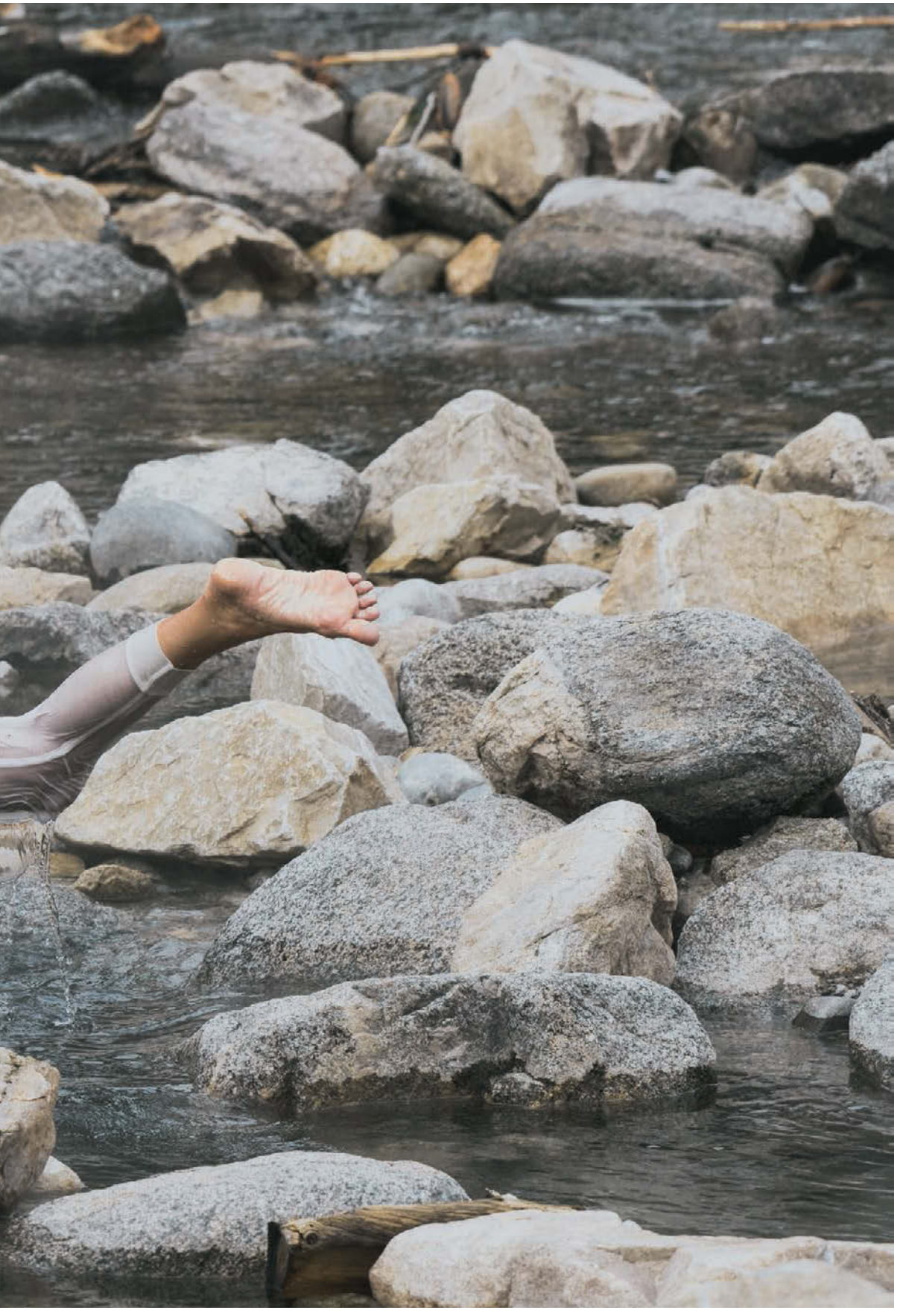
It takes a while to distinguish what comes first from what comes after.
You learn to approach the authentic obliquely. It's shy.
You realize it's best if you don't have a map.

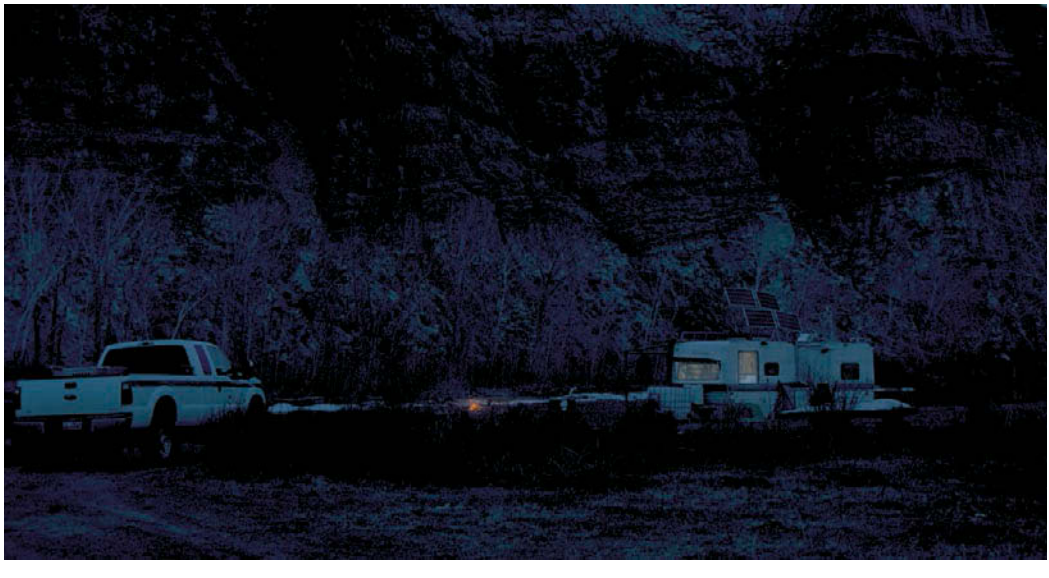
HUNT 2

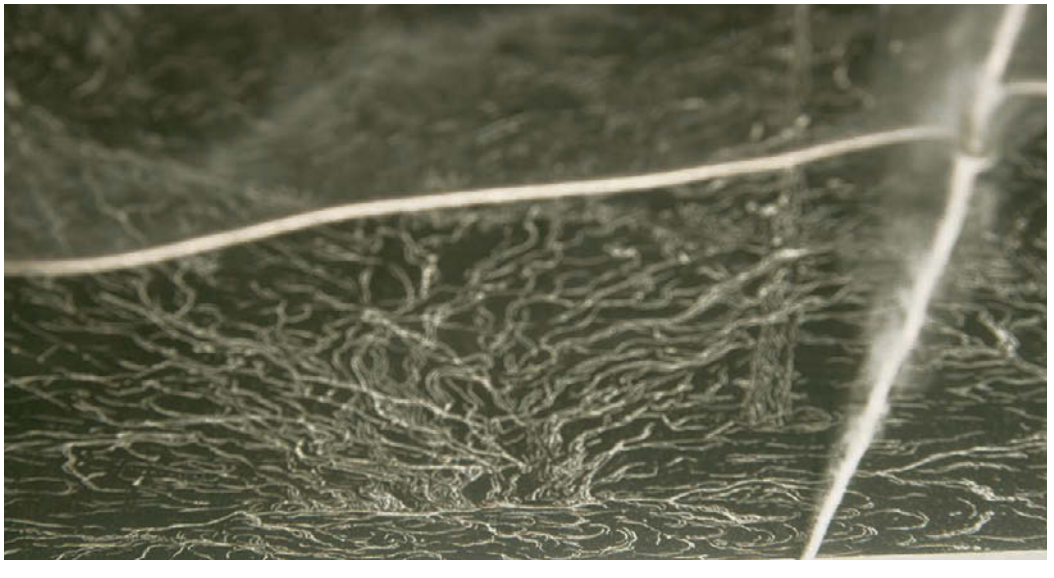


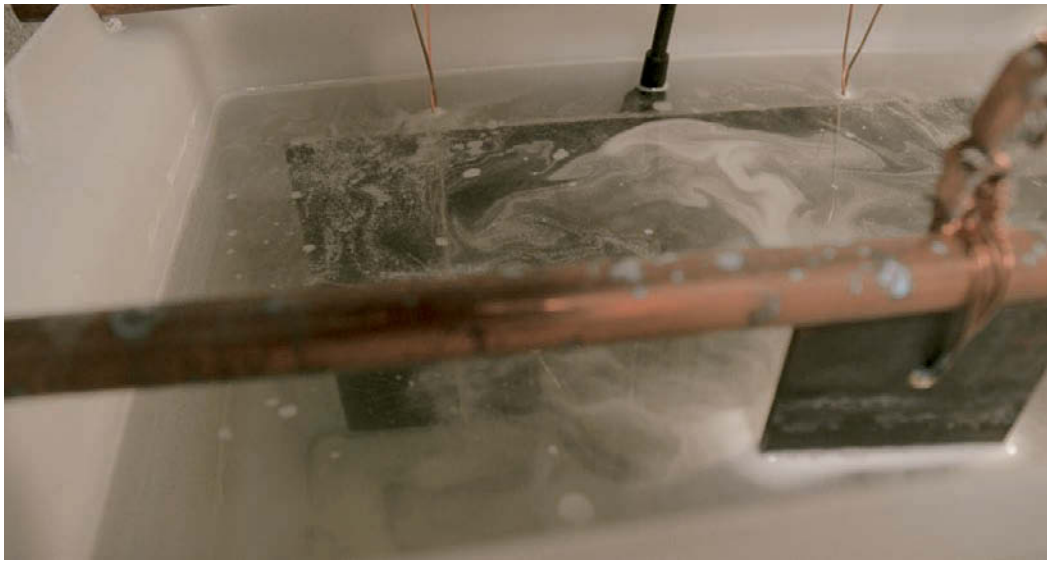


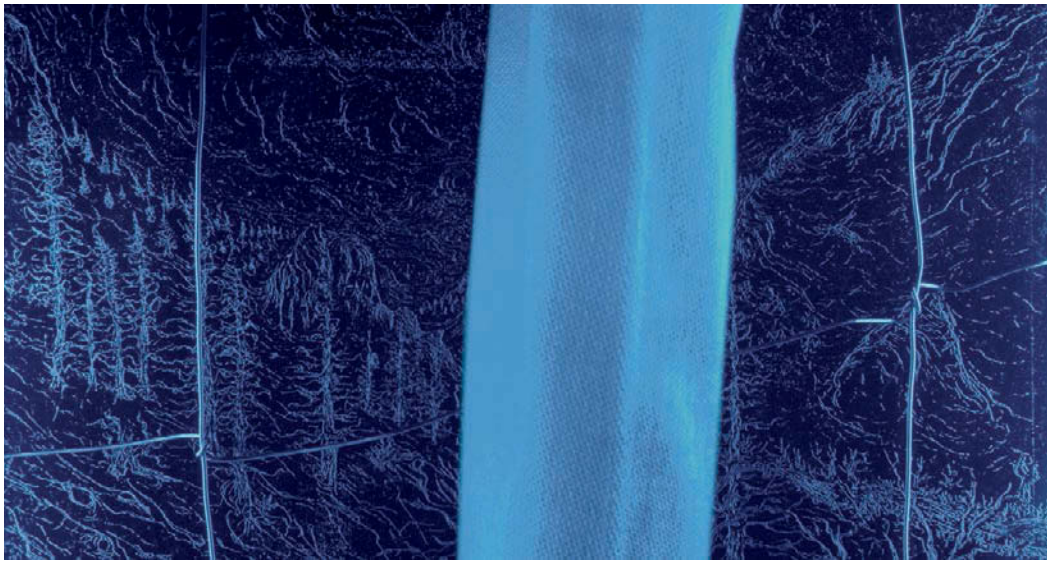


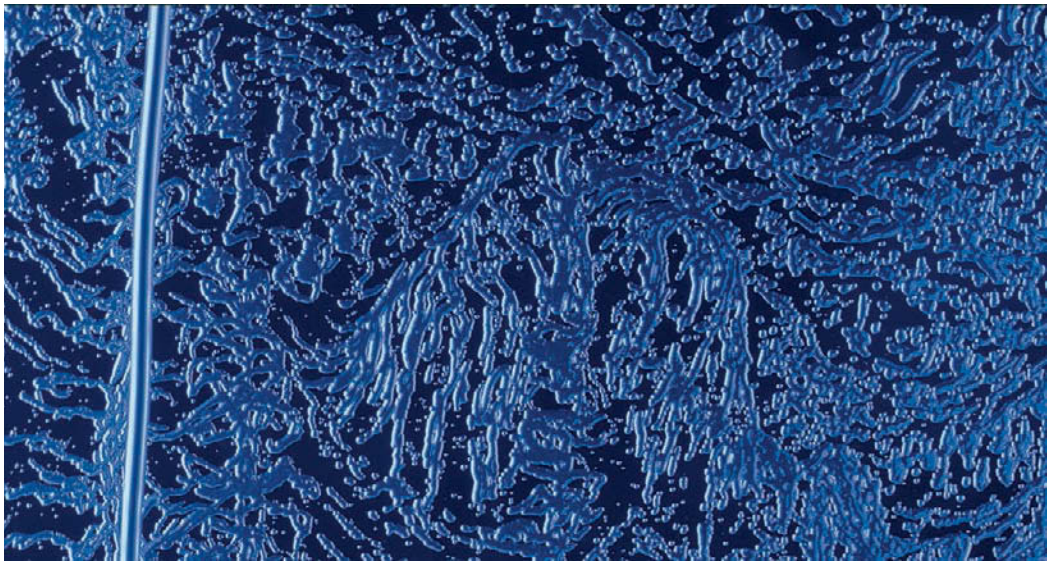


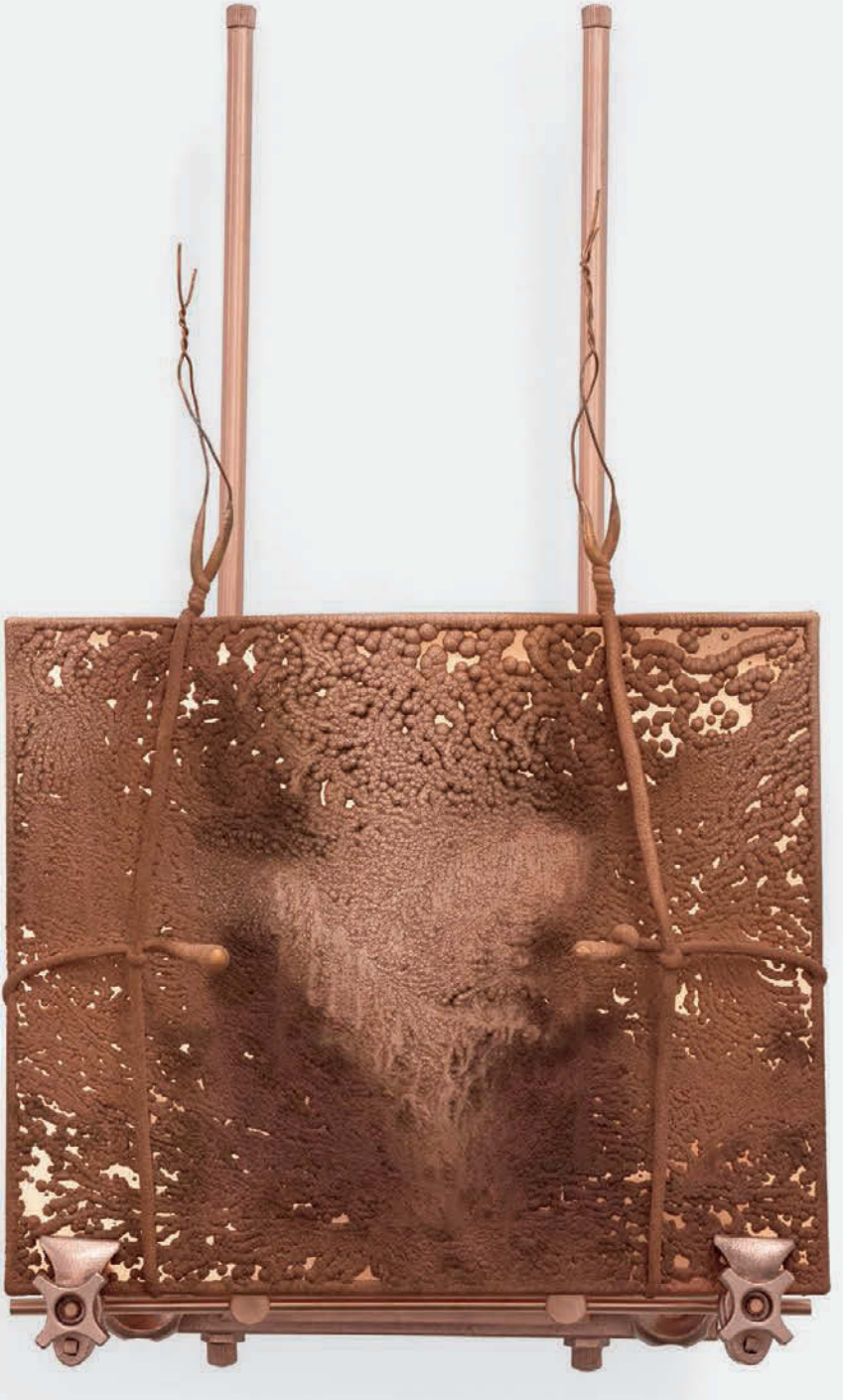




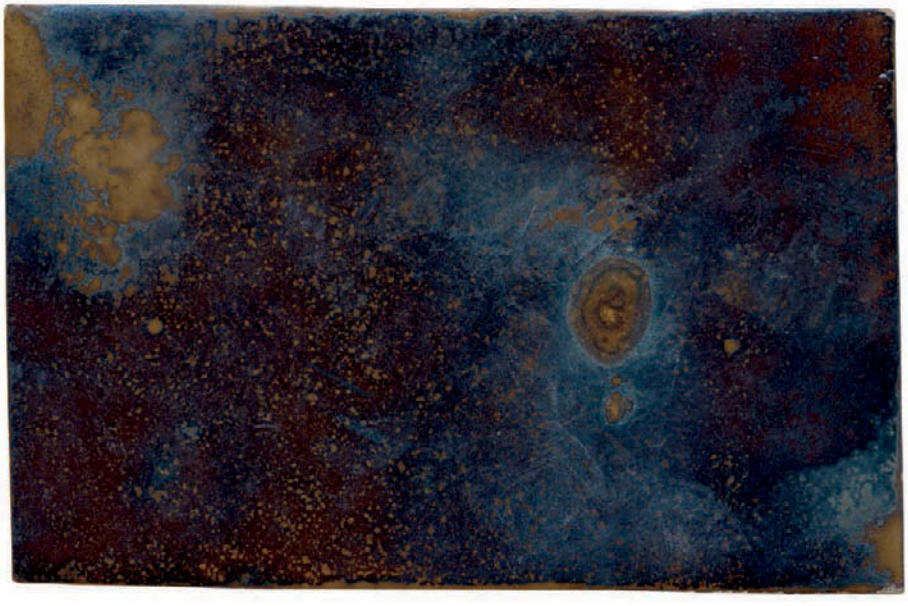








Panasonic



August Strindberg, "Celestograph," 1894. Photogram, 3⅛ x 4¾ in. (8 x 12 cm). National Library of Sweden, Stockholm, Manuscript Collection, inv. no. Sg NM_I_VII:A

METAMORPHOSES

Jennifer Raab

A deep, cool blue consumes the field of vision, the eerie color that announces the morphing of night into day, or day into night. A dark spot comes into view, white marks surrounding it, and a vibratory hum is the first sound we hear—long minor chords as the camera brings us closer to the stain. A quick cut to birds circling overhead. And now we sense—even if we do not yet see—that this is a site of death. Innumerable tracks in the snow surround a carcass, but where they come from is unclear. Without an origin, they seem frantic and illegible. We move in from above, the scale of the body indeterminate even when the ribs and vertebrae are visible, the fluid course of the camera contrasting with the rough texture of the ground, a pocked surface that appears almost lunar. No other objects provide proportion. There is no horizon line. The aerial view abstracts the space it frames.[1]

The first two and a half minutes of Matthew Barney's *Redoubt*, a film set in the Sawtooth Mountains of Idaho, denies the conventional terms of landscape. When the more familiar language of the alpine sublime soon takes hold—a panoramic sweep through rugged, snow-covered peaks, roiling banks of clouds that obscure and then reveal the topography—we have already learned to mistrust our vision, and to anticipate the next transformation. This soon arrives: a forest of charred trees (several removed and reimagined by Barney as discrete sculptures) standing in the film like limbless sentinels, the sound of fire serving as a memory of this disaster; the encampment of Diana, goddess of the hunt, with her languid Virgins and her arsenal of weapons; the Engraver, a man employed by the U.S. Forest Service, arriving at the home of the Electroplater, a woman whose alchemical work both enables and transforms the images the Engraver will make as he tracks Diana. The film, the engravings, the electroplates, and the sculptures all propose differing acts of metamorphosis. Landscape shape-shifts throughout these forms and media, moving between sky and ground, gods and trees, wood and metal, past and present, stars and soot.

The plates first appear as a kind of double offering. The first offering is made to the Engraver. At the Electroplater's home—a small trailer by the edge of a river (p. 34)—she presents the Engraver with two packages: copper plates wrapped in thick brown paper, each a luminous tabula rasa to be coated and carried into the mountains, set on a tripod, and engraved with a needle, like a strange version of a plein-air sketch. Rather than quick fluidity, the engraved "sketch" is premised on friction—drawing not as a mark on top of a surface but as the transfiguration of the surface itself.[2] The other offering assumes a more cosmological guise. After the Engraver unwraps his blank plates at the kitchen table, the Electroplater unearths another one outside (p. 36), delicately moving aside dirt and dung and stones with a shovel to reveal a plate with an image like a mesmerizing imprint of the night sky (p. 20): blackness pinpricked by stars, a galaxy of bright copper accretions tempered by the dull luster of oxidized sea-green forms.[3]

This plate represents a mode of image making more akin to the early history of photography—the photograph as a direct index of the world. In the 1830s, the British scientist and pioneer of photography William Henry Fox Talbot began to experiment with what he termed "photogenic drawing" by placing a pressed plant on sensitized paper, covering it with glass, and leaving it in the sun. A spectral picture resulted, darkened where the light contacted the paper, white where the botanical specimen lay (fig. 1). At the end of the nineteenth century, to capture the sky, the Swedish playwright August Strindberg placed photographic plates on a windowsill at sunset, exposing them to the celestial bodies (see frontispiece to the present essay). "The night sky filled the plate with white spots," he wrote in 1896, "blurred like when one looks at the stars through a pair of spectacles."[4] He called the works, produced with neither a camera nor a lens, "celestographs." And while the celestographs were not representations of the stars per se, as Strindberg imagined, they are a kind of electromagnetic snapshot: portraits of the physical world at a particular moment in time.[5] "The question is," Strindberg wrote in a letter, "what does the world look like when not seen through our eye?"[6] Such an interest seems to guide the actions of the Electroplater and exists in striking contrast to the transgressive voyeurism of the Engraver. With the buried plate exposed, the Electroplater assumes a posture of transmission, one arm raised, the other lowered, body tilted, like a bird banking left (p. 37). Her body thus forms a link between sky and ground, between the light and heat and invisible particles of the universe and the marks left by them on a rectangle of copper nestled in a small mound of mulch.

Fig. 1
William Henry Fox Talbot, "Wrack," 1839. Salted paper print, 8 11/16 x 6 7/8 in. (22 x 17.5 cm). Metropolitan Museum of Art, New York, Harris Brisbane Dick Fund, 1936, inv. no. 36.37 (25)

If the Engraver seeks to document the land, the hunts, and the women themselves—copper plates and needle his increasingly obsessive tools of possession—the Electroplater's work both defines and obscures these images. The first engraving made in the film, in Hunt 2, is an image that is easy to recognize as a landscape: a steep ridge as the horizon line, the sky above, exquisitely contorted trees occupying the foreground, spindly conifers rising up behind (p. 78). Feathery strokes convey the observational sensibility of plein-air work—abbreviated lines that reveal the act of drawing while seeing, looking down at the plate and out at the natural world in quick and continuous succession. Rarely straight, these marks also have the effect of a topographical map, a survey of the features of the land that communicates, through the language of line, mass and depth and height. This is emphasized and then exceeded in the electroplated versions, the first of which we see produced in the film, shuttled from one chemical bath to another in the trailer (p. 96), the hum and crackle of electrical currents testifying to the transformation that takes place. Fine engraved lines become rounded, raised surfaces, developing on the plate like a virus. Instead of providing the illusion of recession into deep space, the electroplates in this series, called *Bayhorse*, grow outward, inviting a tactile engagement. The deft little gestures that constituted the rather unassuming

Fig. 2
David Teniers the Younger, "The Alchemist," ca. 1650. Oil on panel, 10¾ x 14¾ in. (27.4 x 37.4 cm). Mauritshuis, The Hague, inv. no. 261

Fig. 3
Joseph Wright of Derby, "A Philosopher Giving That Lecture on the Orrery, in which a Lamp Is Put in Place of the Sun," 1766. Oil on canvas, 58 x 80 in. (147.3 x 203.2 cm). Derby Museum and Art Gallery, Derby, England, inv. no. DBYMU 1884-168

sky in the engraving become more prominent in the first and second states (pp. 84, 89) of the electroplates. By the third state (p. 92), the cleft where the ridgelines meet is a darker, matte swath of copper, accretions like a reef of coral continuing over the top edge of the plate. In the fourth state (p. 95), a burned area appears in the center, mimicking the charred trees that remain from the Dry Creek Fire in the Sawtooths, a wildfire sparked by a lightning strike in 2016. In the fifth and final state (p. 98), the faint curve and dip of the ridge is again visible. A thick frame has taken shape, containing within it bulbous, jeweled growths. Writing about Barney's 2014 project *River of Fundament*, Okwui Enwezor describes the "granular grammar of material"; in *Redoubt*, the copper plates are the site for generating such a grammar.[7] In the five states of *Bayhorse*, we encounter landscape not as a stable aesthetic formula but as the ground for material experimentation.

In her isolated trailer, the Electroplater practices her alchemy, turning what we might think of as "base" images of natural, animal, and human forms into elaborate relief sculptures in a "noble" metal. *The Alchemist's Handbook*, a twentieth-century interpretation of medieval philosophical and scientific traditions, sits on the shelf (p. 35) alongside ancient stories of gods retold for modern readers (Edith Hamilton's *Mythology*) and the predictive text of mortals (*The Old Farmer's Almanac*, published annually since 1792).[8] A kind of studious wonder is associated with the figure of the alchemist. The seventeenth-century Flemish artist David Teniers the Younger created hundreds of paintings on this theme (fig. 2), works characterized by a profusion of tools and technologies, books and manuals, and that present the alchemist as possessing a monkish sense of focus and a penchant for material experimentation.[9] We see this disposition in the Electroplater, deliberately negotiating her tight and highly curated quarters, the chemicals meticulously handled, the laboratory and domestic space narrowly divided, so much of the alchemical process involving time, patience, and waiting. But she works expansively as well, building a model of the constellation Lupus (the wolf) with clumps of electroplated bronze wool as stars, connected by narrow copper pipe and broad semicircles of cardboard (pp. 66–67). The model evokes orbiting celestial bodies, as if the Electroplater were constructing an unmechanized orrery, manipulated by her hands and assembled in view of the now-unburied plate. That patinated (im)print from the ground becomes a source for creating the stars. Rather than providing a dramatic performance of scientific knowledge—as in Joseph Wright of Derby's *A Philosopher Giving That Lecture on the Orrery* (fig. 3), in which the orrery is inseparable from oration—the Electroplater works through her materials. Cutting, clamping, turning, touching, she divines a knowledge that remains elusive to the viewer.

The story of Diana, goddess of the hunt, and Actaeon, the hunter who happens upon her bathing and is brutally punished for his transgression, forms the manifest basis for the film. But a different mythological tale, that of Apollo and Daphne (see fig. 4), offers a way to think through many of the central forms and themes of the *Redoubt* project: metals, trees, and bodies, as well as the representation of animation and stillness in the landscape.

In Book 1 ("The Shaping of Changes") of Ovid's *Metamorphoses*, after "countless species" have been created from the "discordant harmony" of heat and water, we meet the triumphant god Apollo, who has slain one of these new creatures—the serpent Python—by employing every arrow in his quiver.[10] Apollo, a son of Zeus, boasts of this accomplishment to Cupid while simultaneously disparaging that god's youth and "wee torch." In retaliation, Cupid soars up to the summit of Mount Parnassus, the home of the Muses, and launches two arrows that will work at "cross-purposes": one for Apollo with a "polished tip of gold" to incite love; the other, for Daphne, the daughter of the river god Peneus, with "a tip of dull, blunt lead" to induce flight.[11] Metals are thus endowed with agency, capable of provoking desire and repulsion. As in *Redoubt*, they are the stuff of weapons; in an early scene of the film, we see Diana filling and pressing her own ammunition (pp. 50–51)—a brass shell and a lead bullet electroplated with a copper jacket.

Metals are a means of asserting (or disputing) power and control. In Hunt 4, Diana discovers the Engraver surreptitiously depicting the Virgins' lithe movements around a carcass (pp. 159–60) and responds by firing a bullet that ricochets across his copper plate and scars the surface (p. 169). Her hostile retort prompts his awkward retreat through the deep snow. Metals are also the means of storytelling. Cupid's gold and lead arrows set up the tale of Apollo and Daphne, the pursuer and the pursued. In *Redoubt*, the copper plates tell numerous tales—what the Engraver sees, imagines, and remembers; how Diana resists; what the Electroplater conjures and obscures; the traces that the earth and the stars seem to leave behind.

Daphne emulates Diana—a chaste hunter at home in the woods—but cannot escape Apollo's rapturous pursuit instigated by Cupid's golden arrow. Ovid compares the god's lust to a landscape easily caught fire—a field in which "the harvest stubble / is all burned off" or hedges "set ablaze" when "some careless traveler / should brush one with his torch or toss away / the still-smoldering brand at break of day." Apollo tracks Daphne through the rocky ground; she the "lamb," he the "wolf."[12] He justifies his pursuit, assuring her of his exalted peerage (this is no pastoral; he is "not some shepherd boy, / no shaggy

Fig. 4
Gian Lorenzo Bernini, "Apollo and Daphne," 1622–25. Marble, H. 96 in. (243.8 cm). Galleria Borghese, Rome, inv. no. 534

guardian of flocks and herds"), exclaiming over his concern for her safety as the desperate pace continues, lamenting the inevitability of the chase and "the love that I must suffer," which even he, the inventor of "the art of medicine," with "worldwide fame," cannot remedy.[13] Finally, he abandons language and accelerates. She pleads to her father and his divine waters: "transform me."[14]

> Her prayer was scarcely finished when she feels
> a torpor take possession of her limbs—
> her supple trunk is girdled with a thin
> layer of fine bark over her smooth skin;
> her hair turns into foliage, her arms
> grow into branches, sluggish roots adhere
> to feet that were so recently so swift,
> her head becomes the summit of a tree;
> all that remains of her is a warm glow.[15]

And thus, Daphne is transformed into an evergreen: a laurel tree, whose foliage will crown the heads of gods and generals. Her body may have eluded Apollo, but she becomes his arboreal possession, stilled into bark and branches while a heart continues to beat within. In Gian Lorenzo Bernini's arrestingly elegant sculpture, we see this metamorphosis taking place, each line of Ovid translated into marble, agile limbs becoming rough and vegetal, bark consuming the torso, hair and fingertips sprouting leaves. Apollo's touch initiates the destruction of one body and the emergence of another.[16] In a brief close-up in the film (p. 51), singed and splitting bark reveals an uncannily smooth trunk beneath, a luminous ivory that reads as both unblemished stone and white skin.

Transformation, burning, evergreens and mountainous terrain, wolves, gods, the huntress and the hunted—all these aspects appear in *Redoubt*. The tree sculptures, made after the film, are the result of two forms of destructive power—burning and chemical reaction.[17] Yet these forces can also be generative. Three of the sculptures—*Basin Creek Burn* (pp. 322–27), *Elk Creek Burn* (pp. 306–11), and *Virgins* (pp. 333–37)—are made from lodgepole pines, a species whose seeds require the heat of fire to germinate.[18] The sculptures acquire a marbled effect through a carefully timed pouring of two different metals, provoking an explosive reaction when the metals make contact with the moisture in the mold. *Basin Creek Burn* has a spiral-like "veil," to use Barney's term, produced when molten metal was poured through the tree and leaked through its cracks and channels, resulting in a filigreed surface.[19] For one tree, called *Diana* (pp. 346–47, 350, 352–53), Barney applied a liver-of-sulfur patina to the veil to create a polychromatic effect, a link

Fig. 5
Albert Bierstadt, "The Great Trees, Mariposa Grove, California," 1876. Oil on canvas, 9 ft. 10⅜ in. x 4 ft. 11¼ in. (300.7 x 150.5 cm). Private collection, Seattle

to the gradations of color that constitute the Kryptek camouflage designs that Diana wears.[20] In two of the sculptures, the roots are cast in copper or bronze, reminiscent of the Renaissance practice of life-casting, whereby anything from a lizard to a rosemary branch might be used as a pattern to create a cast sculpture, often bound for a *Kunstkammer*, a collection of marvelous objects, both natural and human-made, that can be understood as a precursor to the modern museum. Such a three-dimensional imprint was, as Pamela H. Smith and Tonny Beentjes have argued, a means of knowing nature. These "stunningly precise" casts were "visual proof of knowledge about the processes of transformation, including the properties of sand, plaster, salts, metals, and fire employed in their making. Life casts thus demonstrated the powers both of nature and its transformation by human artifice."[21]

Trees have a particular mythology in the American West. Shortly after groves of giant sequoia trees were encountered for the first time by settler-colonists in the early 1850s, they became the focus of artistic representation, commercial exploitation, and touristic awe. Nineteenth-century American landscape painter Albert Bierstadt undertook three paintings depicting the massive old-growth trees in Calaveras County, California, including one

Fig. 6
Carleton Watkins, "Section of the Grizzly Giant," 1861.
Albumen silver print, 17 x 20⅛ in. (43.2 x 52.1 cm).
J. Paul Getty Museum, Los Angeles, inv. no. 84.XM.493.17

canvas that aimed to stun with its own towering height, measuring nearly ten feet tall and necessitating a rather impossible aerial recession to accommodate the whole trunk (fig. 5). A more common method of representing trees like the "Grizzly Giant," the famed sequoia in Yosemite National Park, was to include a figure for scale; photographer Carleton Watkins chose the naturalist and guide Galen Clark, himself a grizzled character, for his first image of the lower section of the tree and also used the largest photographic format available to him, the so-called mammoth plate, to emphasize the enormity (fig. 6).[22] The big trees of the Sierra Nevada were "treated as trophy," as Simon Schama has noted, "skinned, mounted, and displayed for bragging and for cash." The bark was shipped to England to be exhibited and admired; meanwhile, tourists danced on the stump of a felled sequoia in Calaveras Grove, and religious men proclaimed the botanical wonders to be the contemporaries of Christ.[23] Veneration and desecration occurred in tandem. The giant trees were understood as manifestations of biblical time, proof of the divine rights—the "manifest destiny"—of a young, imperial nation.

If European history was made visible through the material remnants of the past—the ruins of castles and cathedrals—American history found its origin stories in the physical environment. In the German painter Caspar David Friedrich's *Abbey in the Oak Forest* (fig. 7), the contorted limbs of the oaks frame the remains of a Gothic cathedral. The natural is a metonym for

Fig. 7
Caspar David Friedrich, "Abbey in the Oak Forest," 1809–10.
Oil on canvas, 43½ x 67⅝ in. (110.4 x 171 cm).
Alte Nationalgalerie, Berlin, inv. no. NG 8/85

the cultural. In the dim light of winter, Friedrich creates an intimate pathos, a landscape of retrospection marked by death and quiet ritual. By contrast, Bierstadt adopts an evangelizing tone—in these ancient woods is the future, he seems to say. "Forest scenery" is America's most distinctive feature, wrote the nineteenth-century landscape painter Thomas Cole. "In the American forest we find trees in every stage of vegetable life and decay—the slender sapling rises in the shadow of the lofty tree, and the giant in his prime stands by the hoary patriarch of the wood—on the ground lie prostrate decaying ranks that once waved their verdant heads in the sun and wind. . . . In looking over the yet uncultivated scene, the mind's eye may see far into futurity."[24]

But the burned landscape offered another kind of "scene," one that did not propose a clear apprehension of the future. In Sanford Robinson Gifford's *Twilight in the Catskills* (fig. 8), we stand near the edge of a precipitous cliff, dead trees on either side—presumably casualties of a forest fire—while the last light of a stunningly apocalyptic sunset consumes the sky. Gifford exhibited the canvas one month before the siege of Fort Sumter, in Charleston, South Carolina, began the Civil War in April 1861.[25] In the second year of the war, Winslow Homer produced his very first canvas and, simultaneously, an engraving for the illustrated magazine *Harper's Weekly*, titled *The Army of the Potomac—A Sharpshooter on Picket Duty* (fig. 9). In Gifford's work, the charred tree becomes an allegory for the precariousness of life; in Homer's, the tree is what

Fig. 8
Sanford Robinson Gifford, "Twilight in the Catskills," 1861. Oil on canvas, 27 x 54 in. (68.6 x 137.2 cm). Yale University Art Gallery, New Haven, Conn., Gift of Joanne and John Payson in memory of Joan Whitney and Charles Shipman Payson, Class of 1921, and in honor of Joan Whitney Payson, B.A. 2009, inv. no. 2007.178.1

Fig. 9
Winslow Homer, "The Army of the Potomac—A Sharpshooter on Picket Duty," from "Harper's Weekly," November 15, 1862. Wood engraving, 11 x 16 in. (27.9 x 40.6 cm). Yale University Art Gallery, New Haven, Conn., Gift of Allen Evarts Foster, B.A. 1906, inv. no. 1965.33.338

makes such violence possible. Concealed in its branches, his rifle resembling just another tree limb, the sniper could find his unsuspecting target and strike from a great distance. Such weapons marked the advent of modern warfare.

Diana is *Redoubt*'s mythological sharpshooter. Yet the camera itself assumes this role even more prominently throughout the film. Shot using drones, the aerial footage has a disturbingly affectless tone. As with the opening sequence, the sky becomes a place of detached, omniscient surveillance, producing a perspective that feels inhuman and that unsettles our assumptions about who controls this place. Meanwhile, increasingly material forms of monitoring consume the story on the ground—a motion-sensor camera with a live feed, the telescopic rifle, night-vision goggles, the burned tree as a lookout tower to be scaled as plumes of soot are kicked off, the reflective copper plate as a mirror to track who might lurk behind. Seeing becomes inseparable from trespassing. And, as with Ovid's stories of the gods, retribution is written in the stars.

NOTES

1. Barney describes "stripping away all the ambient sound and removing all the camera motion" from the opening sequence of the film to create "a more abstract space," one that felt "almost like deep space rather than grounded in the landscape" and that "established a more dynamic range of scale but also removed the naturalism from the piece right off the bat." This initial ungrounding of the landscape sets up an abstract framework through which to introduce the characters as simultaneously mythological and contemporary. Matthew Barney, email message to author, May 22, 2018. The author thanks the artist for his generosity in responding to questions, both conceptual and technical, and for the many illuminating conversations about landscape past and present.

2. It is "part of the artist's work," Adam Phillips writes about Barney's ongoing series *Drawing Restraint* (1987–present), "to make the obstacles to the work somehow productive, to make the obstacles the instruments." Adam Phillips, "Keeping It Going," in *Subliming Vessel: The Drawings of Matthew Barney*, ed. Isabelle Dervaux, exh. cat. (New York: Morgan Library and Museum, 2013), 48. In *Redoubt*, such instrumental restraint is as much about medium as it is about site (drawing in the cold, inhospitable mountains, in deep snow, sometimes at night by the light of a headlamp).

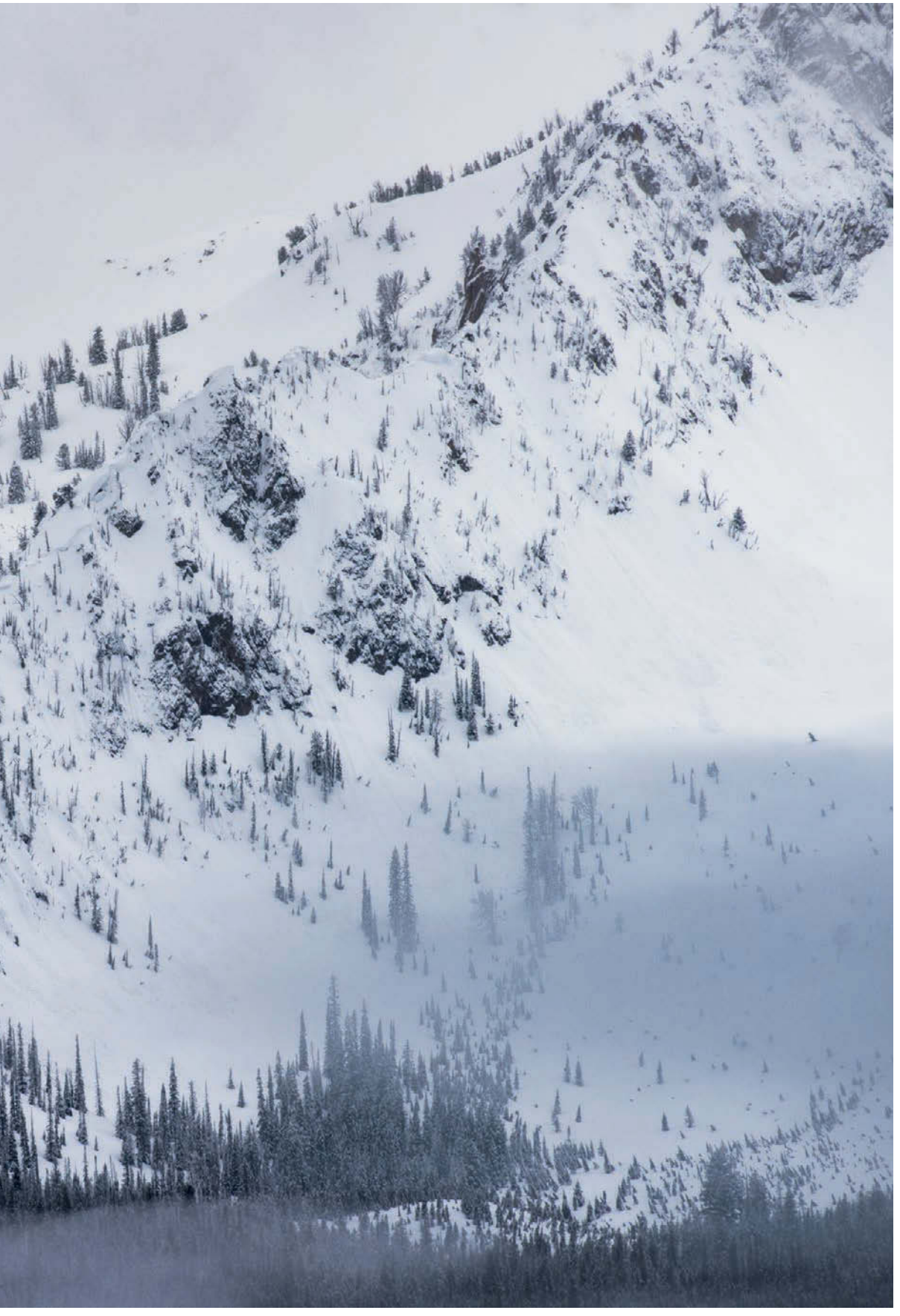
3. To make this plate, titled *Redoubt: Base Plate Conductor*, areas of the asphaltum ground were selectively removed with a solvent to expose the copper beneath. When electroplated, the plating built up more heavily in the areas that had been thoroughly cleaned. Where the asphaltum had been partially cleaned, the plating created a gradient. The green areas were produced using a technique called "buried patina," in which a mulch (such as sawdust or manure) is saturated with an acid (in this case, vinegar); the mixture is piled onto certain areas of the plate, the contact with the acid creating the patina. Matthew Barney, email message to author, June 11, 2018.

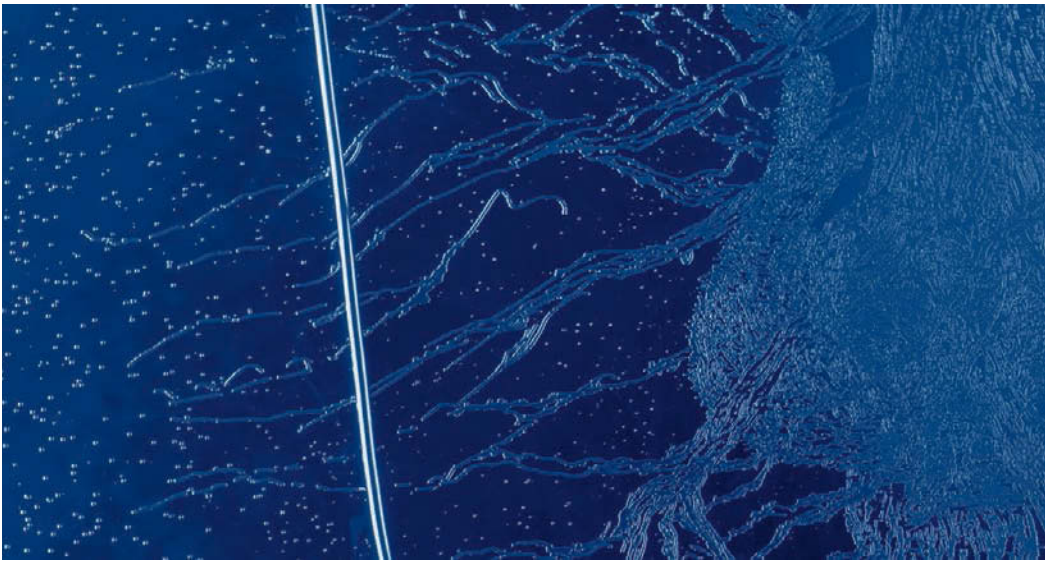
4. August Strindberg, "On the Action of Light in Photography: Reflections Occasioned by the X-rays" (1896), in *August Strindberg: Selected Essays*, ed. and trans. Michael Robinson (Cambridge: Cambridge University Press, 1996), 163–64.

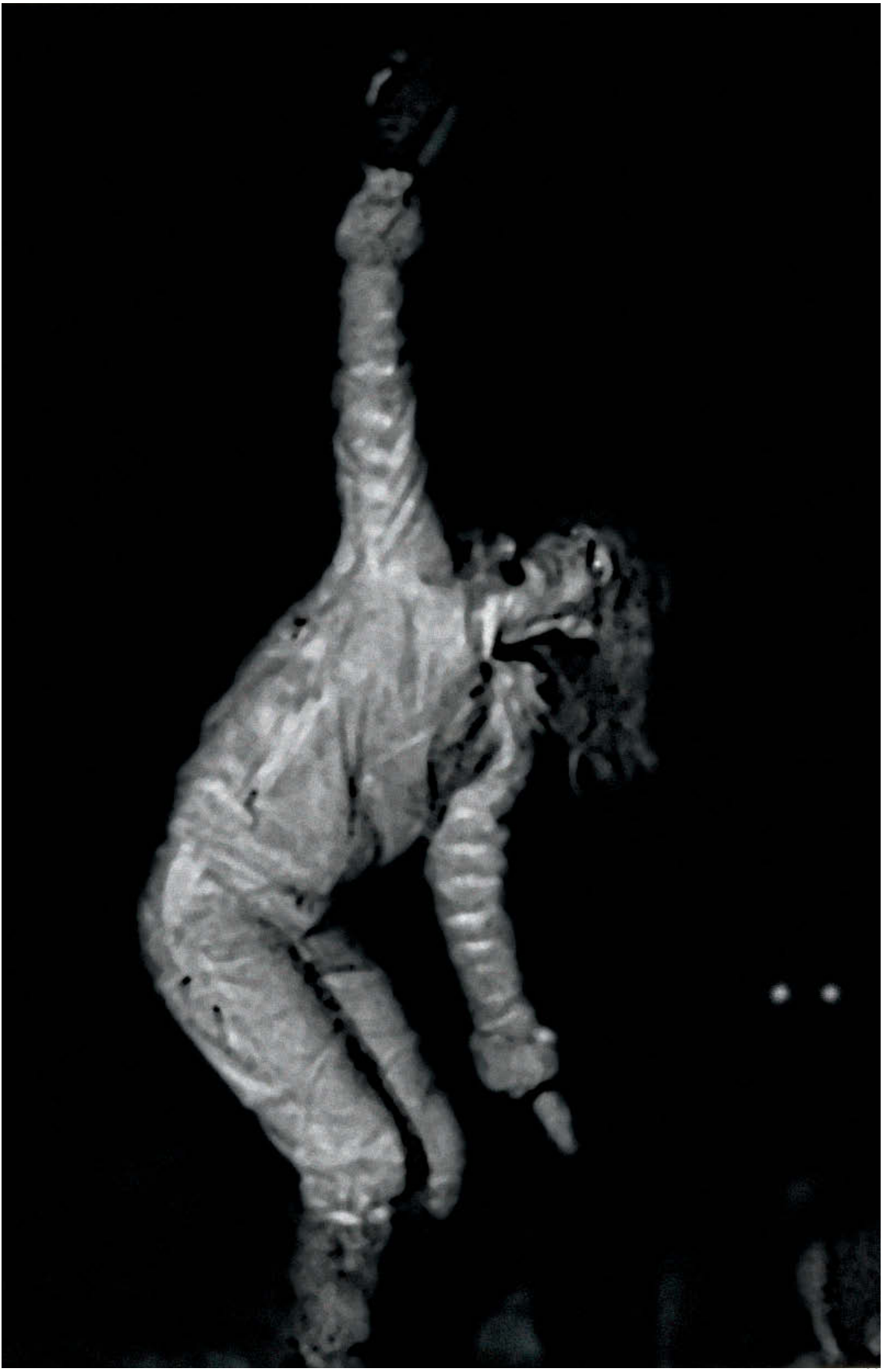
5. Though it would be easy to dismiss these works as pseudoscientific dabbling, they in fact emerge from questions that directed some of the most important scientific discoveries of the period: How to explain, and picture, what cannot be seen but that we know exists—X-rays, light waves, the radiation emitted from stars? What are the fundamental properties of light? At the same time that Strindberg was creating his celestographs, physicist Max Planck began a theoretical investigation into the problem of black-body radiation, asking how a hypothetical object could absorb all forms of light and finding that this could only be answered if light acted not just as a wave but also as a particle. Five years later, Planck produced a mathematical explanation called the "Principle of Elementary Disorder." In seeking material clarity for questions of an immaterial nature, both Strindberg and Planck found they must resort—albeit in extremely different ways—to methods based on chance. Strindberg removed himself, allowing nature's caprice the agency of creation. Planck abandoned the tenets of Newtonian physics—that, no matter what the scale, the laws of nature behave in regular and uniform ways—to work on the problem of light.
6. August Strindberg, letter to Birger Mörner, January 4, 1895; quoted in Björn Meidal and Bengt Wanselius, *The Worlds of August Strindberg*, trans. Sarah Death (Stockholm: Bokförlaget Max Ström, 2012), 302.
7. Okwui Enwezor, "Portals and Processions: Matthew Barney's *River of Fundament*," in Okwui Enwezor, *Matthew Barney: River of Fundament*, ed. Louise Neri, exh. cat. (Munich: Haus der Kunst, 2014), 233.
8. *The Alchemist's Handbook* was written by Frater Albertus in 1960. Edith Hamilton's *Mythology* was first published in 1942, has gone through numerous editions, and has sold millions of copies. The annual edition of *The Old Farmer's Almanac* is released on the first Tuesday of September for the upcoming calendar year and is the oldest continually published periodical in the United States.
9. Lydia Pyne, "Inside the Alchemist's Workshop," *JSTOR Daily* (May 19, 2016), https://daily.jstor.org/alchemists-workshop/ (accessed May 24, 2018).
10. Ovid, *Metamorphoses*, 1.600–605. All citations are Ovid, *Metamorphoses*, trans. Charles Martin (New York: W. W. Norton, 2004).
11. Ibid., 1.642 ("wee torch"), 650–54 ("cross-purposes," etc.).
12. Ibid., 1.678–79 ("the harvest stubble"), 679 ("set ablaze"), 680 ("some careless traveler"), 698 ("lamb," "wolf").
13. Ibid., 1.708 ("not some shepherd boy"), 724 ("the love"), 719 ("the art of medicine"), 721 ("worldwide fame").
14. Ibid., 1.752.
15. Ibid., 1.754–62.
16. Daphne pleads to her father, Peneus, not only to transform her but also to "destroy / that beauty by which I have too well pleased" in order to avoid rape; ibid., 1.752–53. As Lynn Enterline argues in her compelling and nuanced account of the text, violated and fractured bodies are at the center of the *Metamorphoses*. Such bodies are "the place where, for Ovid, aesthetics and violence converge, where the usually separated realms of the rhetorical and the sexual most insistently meet." Book 1 concerns the creation of the world as well as the creation of poetry, and the poetic voice "emerges at some considerable cost to the female body." Daphne is the first of these metamorphoses. See Lynn Enterline, *The Rhetoric of the Body from Ovid to Shakespeare* (Cambridge: Cambridge University Press, 2000), 1, 67. I am grateful to Milette Gaifman and Irene Peirano for their source suggestions on myth and Ovid.
17. For additional discussion of these sculptures, see the essays by Pamela Franks and Molly Nesbit in the present volume.

18. The high temperatures of a fire melt the resin that encases the trees' pinecones, releasing the seeds within. Such an adaptation—in which seed dispersal is dependent on an environmental trigger such as fire—is called "serotiny." For more on fire and the lodgepole pine, see the essay by Gifford Pinchot in the present volume.
19. Matthew Barney, email messages to author, May 25 and 28, 2018.
20. Ibid. The Kryptek website describes their camouflage designs as incorporating "micro and macro layering" that "creates a 3D appearance on a 2D surface and near-invisibility." See Kryptek, "Kryptek Camo Story," https://kryptek.com/kryptek-camo-patterns (accessed June 4, 2018). The materiality of invisibility is crucial to the film.
21. Pamela H. Smith and Tonny Beentjes, "Nature and Art, Making and Knowing: Reconstructing Sixteenth-Century Life-Casting Techniques," *Renaissance Quarterly* 63, no. 1 (Spring 2010): 128, 142. Casting from life began in antiquity but was pursued on a much greater scale in sixteenth-century Europe. The process, sometimes called "lost-pattern casting," entailed molding the flora or fauna in plaster, burning out or removing the specimen (which had created a pattern), and finally pouring molten metal into that void; ibid., 136–37. While Barney's process is different in many respects, the idea of casting from nature, losing some (if not all) of the natural object in the process, using molten metals, and the pattern being crucial to the final sculptural form is interestingly related. I am indebted to Marisa Bass for first proposing the connection to Renaissance casting.
22. On Watkins's later series of photographs of the "Grizzly Giant," see Elizabeth Hutchinson, "They Might Be Giants: Carleton Watkins, Galen Clark, and the Big Tree," *October* 109 (Summer 2004): 47–63.
23. Simon Schama, *Landscape and Memory* (New York: Alfred A. Knopf, 1995), 186–90. While a sustained engagement with questions of landscape and gender lies beyond the purview of this essay, a couple sources are worth noting. For a powerful consideration of gender and trees, see Susan Griffin, "Timber (What Was There for Them): In Which He Makes the Trees His Own," in *Woman and Nature: The Roaring Inside Her*, 3rd ed. (Berkeley, Calif.: Counterpoint, 2016), 58–66. On the identification of women with nature and the "passive landscape," as well as new artistic conceptions of landscape as "the spaces and systems we inhabit," see Rebecca Solnit, "Elements of a New Landscape," in *As Eve Said to the Serpent: On Landscape, Gender, and Art* (Athens: University of Georgia Press, 2001), 45–62.
24. Thomas Cole, "Essay on American Scenery," *American Monthly* 1 (January 1836): 9, 12; reprinted in Sarah Burns and John Davis, eds., *American Art to 1900: A Documentary History* (Berkeley: University of California Press, 2009), 269, 270.
25. Eleanor Jones Harvey, *The Civil War and American Art*, exh. cat. (Washington, D.C.: Smithsonian American Art Museum, 2012), 29.

HUNT 3







Matthew Barney, "Reintroduction: State four" (detail), 2018

THE DYNAMO AND THE VIRGIN: THE ELECTROCOPPERED PLATES OF *REDOUBT*

Elisabeth Hodermarsky

In 1800, five years before Meriwether Lewis entered present-day Idaho through Lemhi Pass, Italian physicist Alessandro Volta formally reported his invention of the electric battery, or voltaic pile, to the Royal Society of London.[1] So momentous was Volta's discovery that breakthroughs in electrochemistry by scientists worldwide would follow in rapid succession.[2] By 1900, at the Exposition Universelle in Paris, American historian Henry Adams would marvel at the forty-foot dynamos (electric generators) in the gallery of machines. In his autobiography, Adams described the enormous dynamo as a transformative power, a "moral force"—a new religion—the technological replacement of Venus or the Virgin.[3] Fast-forward another one-hundred-plus years to Matthew Barney's *Redoubt*, in which electrochemistry continues to reveal breathtaking new technological possibilities while also evoking nostalgia for a simpler time. In the film, the freshly engraved copper plates, enrobed in (Virgin) blue electroplating baths, grow gemlike encrustations of devastating beauty. Throughout the film and this new body of Barney's work, the plates serve both as catalysts of wonder and harbingers of cataclysmic force.

I. The Engraver and the Virgin

The Sawtooth Mountains of Idaho. A gray, bitter winter. Snow accumulates and disappears, silently, in successive campaigns of falls and melts. A swollen river rushes swiftly, carving out new rivulets down the dark mountainside.

A copper plate, obscured by a layer of black asphaltum. An engraver at his easel pitched in snow, concentrated, drawing. A sense of urgency. He must work swiftly. Copper veins appear as his needle incises, displacing brilliant, fresh channels in the dark ground.

In *Redoubt*, the electrocoppered plates bridge exterior and interior, nature and science, physical and electrochemical.[4] They also serve as a narrative thread, from the opening segment when the Electroplater makes her initial offering to the Engraver of a set of grounded plates to the conclusion of the film in which

the completed plates sit enthroned on their easels—remaining untouched—a wolves' curiosity, yet ultimately the only objects left undisturbed in the final collision of wild and domestic, cosmic and terrestrial. They are the physical relics of what has occurred—the sole artifacts of the six-day hunt.[5]

As is his practice, Barney has cast himself in a central role in the film—as the Engraver, the only character to bridge the worlds of civilization and nature, leaving his truck each morning with freshly grounded copper plates and returning at nightfall with freshly engraved images documenting his daily activity. In the evenings, successive plates are handed to the Electroplater (as alchemist) to transform. In this way, the viewer is introduced to each copper plate in what feels like real time, discovering a scene as the Engraver does and glimpsing the drawing from over his shoulder as it takes form (p. 88)—as the etching needle moves through black asphaltum (acid resist)—each image documenting a pivotal moment in the narrative.[6]

The Engraver's plates alternate between being fully and partially grounded, with occasional horizontal bands of pure copper left exposed. Barney has said that this was an aesthetic choice—connecting him to his first experiences of drawing on pure, ungrounded copper[7]—and yet, in the film, these partially grounded plates have a key dual function, simultaneously acting as canvases upon which a scene is drawn and occasionally as mirrors that reflect a critical action occurring behind the Engraver (see, for example, the sketching of *Cougar in Bearing Tree* in Hunt 3). Serving this twin purpose, the copper plates recall the complicated chronicles of mirrors and mirroring, of reflection and reflecting, in the histories of art, philosophy, and science, and are also reminders of the image reversal that is central to the medium of printmaking.

The themes pictured in the plates that are created in the film echo the plot, moving from the broadest to the most intimate in scope as the Engraver draws ever closer to his subjects, both human and animal. In the opening segment, the viewer is introduced to *Redoubt: Base Plate Conductor* (p. 20), depicting a starry cosmos—an anomaly among its peers in both its abstract subject matter and its creation (it was not engraved, but rather *conjured* by the Electroplater through burial in acidic, manure-rich soil and by smoking with sulfurated potash).[8] It is in Hunt 2 that the Engraver begins his documentary quest, with *Bayhorse* (p. 78), a depiction of the Sawtooth Mountain range taken from mid-distance, which serves much like a film backdrop and sets the terrestrial scene. In Hunt 3, the Engraver energetically produces two plates in quick succession, both portraits, *Cougar in Bearing Tree* (p. 116) and *Diana* (p. 220)—the two subjects that are the focus of his own hunts. Hunt 4 marks the central, pivotal point in the film in which the Engraver's growing obsession with Diana compels him to intrude on a critical moment of the huntresses' activity and engrave *Kill Site*

(p. 154), a composite plate documenting the huntresses' discovery of a decimated elk carcass and sighting of the wolf pack responsible for the kill. In Hunt 5, the Engraver draws his most voyeuristic image of all, *Bivouac* (p. 188), on which, cloaked in the darkness of night, he records the intimate activity of the Virgins at their campsite from a brazenly proximate distance. The final plates in the film are *Reintroduction*, depicting a gray wolf glimpsed at close range, and *Sawtooth* (p. 46), picturing the disembodied head of a gray wolf looming above the Sawtooth Mountain range, a talisman of sorts—which, in the closing segment, is left to dramatically encrust in the Electroplater's vitriolic bath. Never does the viewer see either *Reintroduction* or *Sawtooth* being engraved—like *Redoubt: Base Plate Conductor*, they are portents of the cataclysm that is to come at the close of Hunt 6.

II. The Electroplater and the Dynamo

Dead of night. A quiet snow. A clear sky. The stars, rich with energy, glisten above the scorched tree trunks—a fleet of positive charges. Below, the forest. Snow crystals cling first to the extremities of twigs and leaves, then gradually coat all.

A tank of deep blue liquid. A copper plate, tethered by twisted wires, immersed. Copper nodules grow haphazardly, clinging first to the plate's edges, to the engraved lines, to one another. Soft, silent orbs, gently encrusting.

An outgrowth of *Redoubt* has been an energetic deep dive by Barney into the development of each of the images the Engraver sketches into copper in the film—images whose transfiguration there played out movingly and beautifully, yet in an abbreviated, artificially accelerated fashion.[9] Postproduction, seven of the eight copper images introduced in the film have been duplicated and subsequently subjected to far more extensive and elaborate metamorphoses to suggest a fuller range of the transformative possibilities of electroplating.[10] Barney's rich explorations—from horizontal zones of pure drypoint drawing to areas of progressive crystal growth to near-obliteration of an image through burning or overgrowth—confound our conventional understanding of the engraver's copper plate. Ever the Harry Houdini, here Barney uses the traditional intaglio techniques of etching needle and acid bath to, ultimately, create *reliefs*—copper plates sculpted in reverse—so that the images sit above, rather than beneath, the plates' surfaces. At the same time, in his retention of areas of pure drypoint on the partially grounded plates, Barney cleverly draws the viewer back, reminding us that these are indeed intaglios—that they are, at their inception and their core—pure incising into copper.

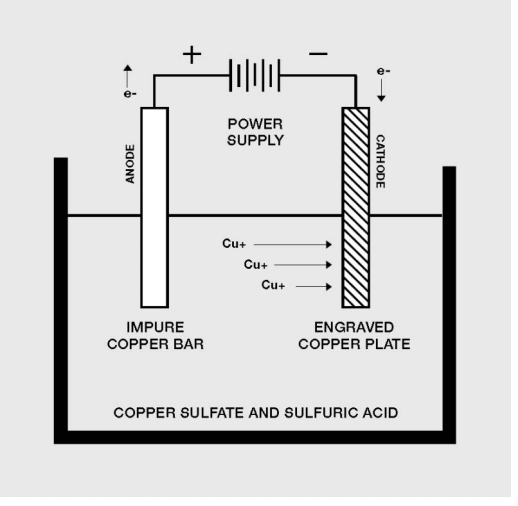


Fig. 1
Diagram showing the electroplating process

Each subject is depicted in a series of five copper plates, ranging from the lightest to the most spectacularly electroplated. In this way, each group of plates can be read as a suite of progressions—as "states," to use the traditional printmaking terminology—that document the development of a single image.[11] And yet, these are not states, since each is a unique statement. As Barney has conceived them, the copper plates do not serve as traditional matrices that are inked and printed but are instead the finished works themselves. Thus, each plate in each series began from a common denominator—an identical, asphaltum-covered, engraved duplicate of the original plate, generated by yet another post-Volta technology: after each of the copper engravings was completed, Barney sent it to Two Palms in SoHo to be digitally scanned and replicated by a mechanical laser engraver, creating a set of exact copies.[12] And it was from there that the process of electroplating commenced.

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Electroplating is, at its basis, the coating of one metal onto another—in this case, copper being plated onto copper—by means of an electric current passed through an electrolytic solution. This is accomplished by dipping two terminals, or electrodes, into an electrolytic solution and connecting them into a circuit with a battery or other power supply. In Barney's process, the

cathode (the piece to be electroplated—that is, the engraved copper plate) is suspended by two sets of wires, and the anode (a solid bar of impure copper) is suspended by a titanium hook into an electrolytic bath containing a solution of copper sulfate and sulfuric acid (fig. 1). The anode (copper bar) is attached to the positive pole of the power source, and the cathode (copper plate) is attached to the negative pole of the power source. A direct current (DC) of electricity is passed through the anode (copper bar) into the solution, splitting up some of the metal ions and depositing them onto the cathode (copper plate).

A niched-out back section of Barney's studio has been outfitted with a fully functional electroplating studio, managed by Jade Archuleta-Gans. Before plating, the reverse side of each copper-plate replica of the original is covered with tape so that it does not draw current and slow down the plating of the image. Each plate in turn is then washed well with copper cleaner and immersed in an electro-cleaning polypropylene tank containing a solution of sodium hydroxide and detergents that eat away any fats or debris that might be on the plate.[13] A set of six additional polypropylene tanks serve as the electroplating baths. Each holds twenty pounds of copper sulfate mixed with distilled water, to which sulfuric acid has been added in a proportion of 5 percent solution per tank. To this chemistry, additional proprietary chemicals are added, including a leveler, which helps keep the chemicals equally distributed so that the copper drawings plate evenly, and a brightener, which keeps the copper from dulling. Each tank has been outfitted with a one-micron filter that serves two purposes: to cycle the fluid so that it stays well mixed and to filter out any dust particles or other foreign matter that would impede the plating. Since the anodes (copper bars) tend to shed impurities, each is wrapped in a polypropylene drawstring bag before being submerged, which acts as an additional filter, keeping the bath cleaner. For a power source, each tank has its own electroplating rectifier, which turns alternating current (AC) into DC, and from which amperage and voltage can be regulated. The process is finicky and, in addition to all of the other variables, the temperature of the tank chemistry also matters—for ideal plating conditions, a 70- to 80-degree Fahrenheit temperature range must be maintained. Accordingly, each tank also has an individual heater wrapped around its exterior.[14]

The first process that each plate of each series has undergone is a relatively straightforward plating, with the rectifier, or power source, set to 10–15 amps. For the most lightly worked plates (the first and second in each series), this is as far as they are taken. For the third through fifth plates of each series, which display a marked progression of crystal encrustation, a second plating process is employed: an immersion in what Barney calls a "crust tank," which

encourages greater nodule growth. This is achieved through a significant upping of the amperage of the rectifier to 45–50 amps and the placement of an anode (or, in some cases, two anodes) at close range, since the nodules tend to concentrate their development where the anode hovers in closest proximity. The leveler has also been removed from the crust tank chemistry to encourage the nodules to grow more naturally (that is, unevenly). Occasionally, two rectifiers have been used in the crust tank to supercharge the nodule growth.

As has been mentioned, the process is both erratic and unforgiving, and the loss of legibility in areas of delicate, fine engraving can happen rapidly in the aggressive crust bath. In some cases, certain areas have been selectively protected with a stop-off plastic mask (as is the case, for example, with Diana's face in the third through fifth *Diana* plates [pp. 231, 237, 245]) or with asphaltum (as is the case, for example, with state five of *Sawtooth* [p. 65]). Occasionally, a "flash plating" (a plating of less than one hour) has been necessary to brighten the larger nodules, and in certain instances Barney has used a wire wheel (wire brush) to brighten areas that have become dull.

During postproduction of *Redoubt*, the process of plating has developed in a systematic yet consistently experimental fashion, with each image being addressed one at a time, and one new discovery leading to the next, and the next.[15] As is often the case when copper and acid are brought into contact, irregularities and accidents have occurred. True to his practice, Barney has been open to following these trails, embracing and incorporating the aberrations—some revelatory—into the process. Consequently, each of the series has pursued its own tangent and developed its own syntax within the language of electroplating and within this body of Barney's work.

The electroplating process, however, has not been entirely linear—the plating of each series has not followed the sequence of the appearance of the plates in the film, nor has each plate been created sequentially, beginning with state one and ending with state five.[16] Rather, the plates within a particular series have been addressed somewhat in tandem, so that the finished group of five reads as a visual progression—as Barney has described it, the goal being to "keep dialing in relationships" between the states.[17] In this way, the postproduction plating maintains a striking resonance with the film in that there has been a consistent call and response within the creation of each series, as if each has set out upon its own individual, transformative hunt.

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Abandoned in the electroplating bath to encrust beyond legibility, *Sawtooth* is the plate with which *Redoubt* closes. It illustrates the looming, disembodied head of a gray wolf hovering above the Sawtooth landscape. The wolf's

pricked-up ears are positioned so as to echo the mountain peaks, and its head is flanked on each side by forest. Pictured at a diagonal at the bottom of the plate is a downed tree with exposed roots that foretells the *Redoubt* sculptures, and at the top of the plate, stars spiral in van Gogh–like swirls.

In state one of *Sawtooth* (and, indeed, in the first state of each series), there is a nervous quality to the crystal growth (p. 52)—a dots-and-dashes sort of pattern—as the electroplating chemistry commences its first campaign on the copper, finding its way to the exposed veins of drawing through the asphaltum resist. In state two (p. 55), the crystals join and thicken, filling in the lines and making them more robust. Quite early on in the plating process—noticeable even here in the second state—crystals began to grow along the edges of the copper plates, creating elegant natural frames. (The fact that the crystals tend to favor edges and corners was something that became apparent early in the plating process and that Barney quickly embraced as an exploitable tool within his growing arsenal of electroplating techniques.) State three (and the successive states four and five) began with the same straight electroplating that the first and second states underwent, but this was then taken a step further as the plate was subjected to the crust bath. In state three (p. 58), the wolf's head has been nearly obliterated by not only overgrowth but also burning—the results of its exposure to a single anode that was placed directly in front of the plate, in close proximity to its center, and an upping of tank amperage. In state four (p. 59), the crusting and burning are taken to an even more spectacular point—now the wolf portrait is completely illegible from the burning, and the entire plate is encrusted with nodules that extinguish nearly every detail, including the downed tree at the bottom of the plate. The only features of the original drawing still barely legible are the wolf's whiskers and the mountain range on each side of the wolf's head.

In the concluding state five of the *Sawtooth* series (p. 65), Barney has retained the legibility of both the wolf's face and (at least partially) the downed tree at the base of the plate, as if resurrecting them from obscurity. This was achieved by selectively masking out both of these areas with asphaltum before they were completely eclipsed by nodule growth (fig. 2). The surrounding areas of the fifth state, however, remained unmasked during crusting, and the plate was submerged for an extensive period to allow for aggressive nodule growth on both the plate and the copper wires that envelope it. Barney's decision to retain the copper wires used to suspend state five of *Sawtooth*—and all of the state-five plates that conclude each series—adds extraordinary majesty to the final images, creating natural easels, or bejeweled thrones, while simultaneously rendering transparent the process of electroplating and crusting that brought them to these magnificent, final points.

Fig. 2
The wolf's head in "Sawtooth" receiving a coat of asphaltum and being immersed in the electroplating bath

Kill Site (p. 154) is the sole plate engraved in the climactic Hunt 4, in which Diana, alarmed by the Engraver's proximity, retaliates and grazes his copper plate with a bullet. *Kill Site* is a composite image that depicts the simultaneous activities of Diana and the Virgins as observed by the Engraver, as he documents their discovery of the carcass of a freshly killed elk and their spotting of the wolf pack accountable for it. In the center of the image is Diana, who looks through the sights of her rifle, mounted on a tripod. She is flanked by her attendants, one behind and one below, captured mid-dance, as they encircle the carcass of the elk at the center of the kill site.

In the case of *Kill Site* and the two other series that incorporate horizontal zones of pure drypoint into exposed copper (*Bivouac* and *Cougar in Bearing Tree*), the plates were carefully suspended by copper wires in the plating baths at the precise tideline between asphaltum and copper, so that the exposed copper with its fine drypoint engraving remained above the chemicals and protected. Accordingly, unlike the wires seen on state five of *Sawtooth*, the wires that are retained on state five of *Kill Site* dangle from the bottom (p. 176), revealing the process by which the plates in this series were plated—upside down, so as to protect the bottom zone of exposed copper above the tank fluids. In the zone of encrustation, the aggressive nodule growth has become almost hypnotic in its three-dimensionality—similar in appearance to the piled sands in an hourglass, or to stalagmites in a cave. Surprising in the opposite (minimal) extreme are the tops of the retained wires that cradled state five of *Kill Site* throughout its extensive electroplating and crusting. In the drypoint zone, where the plate remained protected, the twisted wires appear so comparatively fragile and delicate as to be incapable of holding the weight of the otherwise heavily encrusted plate.

Throughout *Redoubt*, the camera draws the viewer into densely wooded areas rich with underbrush, and out again into open expanses of snow-packed fields studded with charred tree trunks—vestiges of once-forested stretches now lost to fire. Each series of Barney's electrocoppered plates does the same—from plate to plate, the viewer is led from lush areas of copper nodule overgrowth to blighted areas of anode charring. Nowhere among the plate series is this creation/destruction rhythm more apparent than in the plates that constitute *Reintroduction*, which depicts a gray wolf at close range, moving through a grove of trees. Like *Sawtooth* and *Redoubt: Base Plate Conductor*, *Reintroduction* is a sort of talisman in the film, as the viewer never sees the Engraver at work on the plate. In fact, the viewer does not see *Reintroduction* until the opening of Hunt 6, when it first appears already brilliantly electrocoppered and propped on an easel behind the Electroplater and her model of the constellation Lupus.

After filming, *Reintroduction* was just the second of the eight copper-plate images to be developed into a series. So wildly unexpected and astonishing were the results of the electroplating of *Reintroduction* that Barney was inspired to continue to push the boundaries of experimentation in his creation of the subsequent series, to explore the wide-ranging potentialities of electroplating, crusting, and burning. The hesitant pattern of crystal growth seen in state one of *Reintroduction* is similar to the first states of its sister series—a flat sort of dots-and-dashes hesitancy, as copper plate and electrolytic bath first meet. In state two (fig. 3, top), the marks join, becoming denser and more sculptural—the nodule growth forming along the paths of the Engraver's lines and creating identifiable textures, distinguishing bark from fur. In state three (fig. 3, bottom), this legibility is annihilated by anode burn at close range in the crust bath. The fine, gritty vertical charring that nearly obliterates the body of the wolf and the tree grove—obtained by the dramatic upping of rectifier amperage—reads like a dark curtain that has descended over the central, charged scene. In state four (see frontispiece to the present essay)—which is similarly taken on an extended journey through the plating and crusting baths—a wholly unanticipated but magical thing occurs, as that central cluster of wolf and trees delaminates at its bottom and lifts away from the plate proper. This surprising occurrence has the uncanny effect of forcing the viewer into an even closer connection—both physical and psychological—with the wolf. Similar to all of the other fifth states, state five (fig. 4) retains the wires that suspended it through its journey of plating and crusting—here, so thick and blistered as to appear texturally reversed, pillowlike and soft.

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The *Sawtooth*, *Kill Site*, and *Reintroduction* series—and all of the electrocoppered plates of the *Redoubt* project—are mesmerizing in their final, radiant glory. Yet the lustrousness of the completed plates is deceptive, since it hides the duskiness of their making—the reality that the black asphaltum resist remained on the plates right up until their completion, until each plate reached a point at which the artist deemed it finished. Deceptive, too, is the implied intentionality of their finished states; the immaculateness of their appearance masks the haphazard and largely uncontrollable nature of their creation. The fact is that the plating process was never the same twice—the encrustations never exactly reproducible from one plate to the next—and with every immersion in an electroplating or crust bath came a surprise, as each plate emerged with its own unexpected and unique progression of nodule growth.

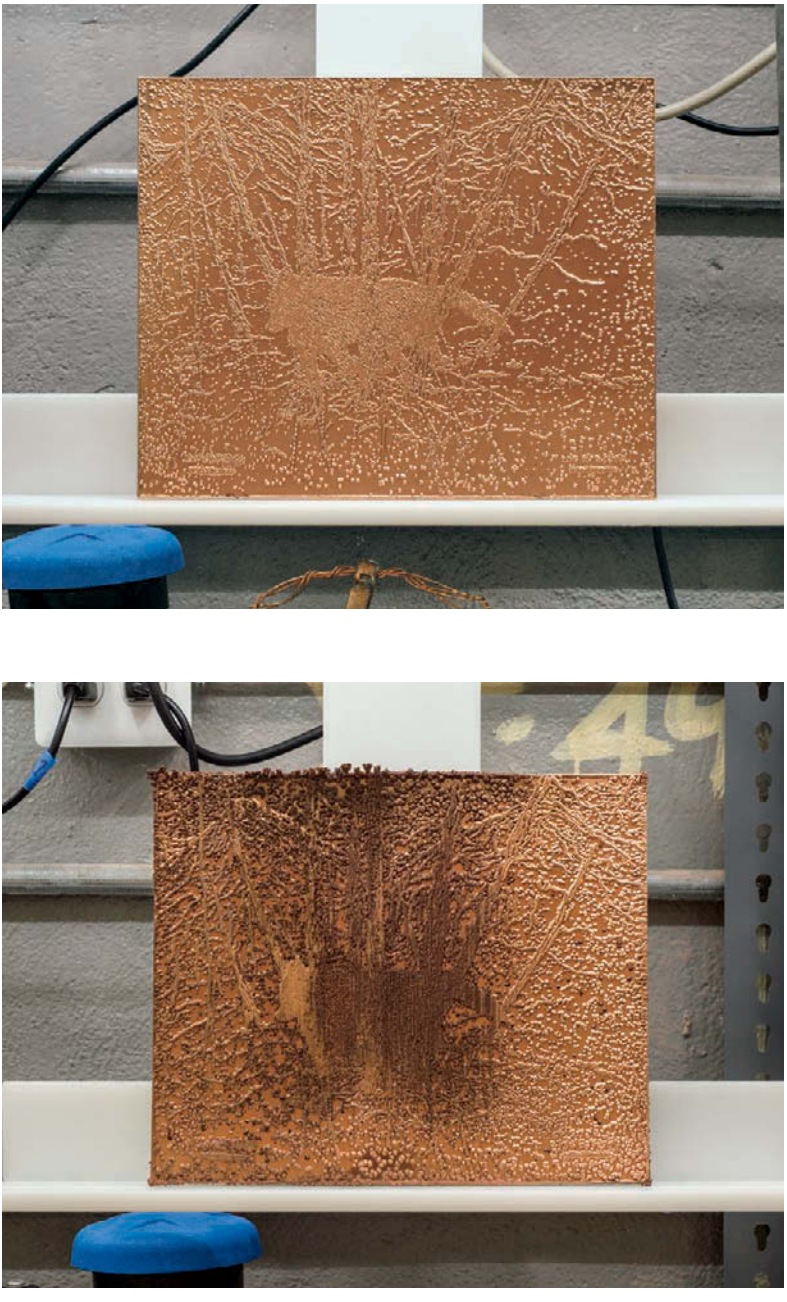


Fig. 3
Matthew Barney, "Reintroduction: States two and three," 2018

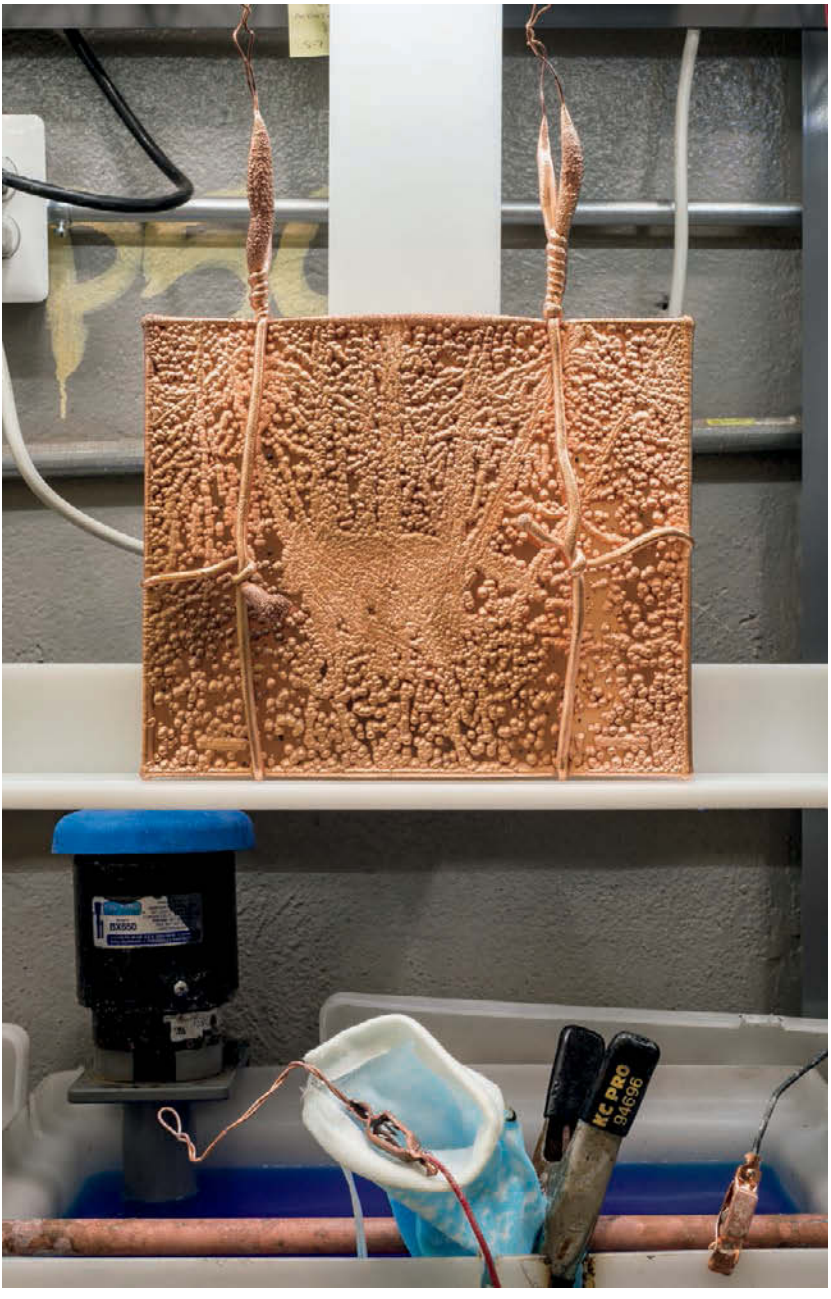


Fig. 4
Matthew Barney, "Reintroduction: State five," 2018

III. The Dynamo and the Virgin

Snowflakes continue to fall, the forest floor now completely concealed. Paths are barely visible—obscured but intuited. Snow drifts betray, deceive. The sun—just yesterday so bright, indubitable—now eclipsed.

A silent interior, a plate immersed in blue vitriol—unattended—growing copper in increasingly brilliant, crystalline encrustations. A portrait eclipsed—no longer legible with the eye, but only, now, by touch. A new language of braille—unknowable to the sighted.

As a wildly experimental sculptor with a limited background in printmaking, it is not surprising that in this new body of work Barney has approached the engraver's copper plate obliquely and inquisitively, and that he has ultimately offered up an unorthodox reconsideration of the whole historical approach to the interaction of copper, drawing, and acid. His use of a vocabulary of intaglio techniques to ultimately create reliefs is astonishing and transformative, as is his forefronting of the copper plate as canvas.

Playing both ends of tradition and innovation, of nostalgia and prescience, the electrocoppered plates of *Redoubt* recollect Henry Adams's awe of over a century ago. We stand before these plates as Adams did before the enormous dynamos in 1900—in simultaneous wonderment and unease—genuflecting at their sheer beauty and stricken by their mysterious power. We are reminded of humankind's genius and limitations, of its ability to create objects of great invention and splendor, yet its inability to completely control the results. These unique and beautiful plates and the role they play in *Redoubt* both record and portend our human condition—our perennial quickness to claim centrality and dominance within the universe, and our perpetual amazement at the realization of our relative inconsequence within the terrestrial and cosmic whole.

NOTES

1. Meriwether Lewis and three other members of the Lewis and Clark Expedition crossed the Continental Divide at Lemhi Pass on August 12, 1805, becoming the first documented persons of European descent to traverse the territory. Alessandro Volta's 1799 invention of the voltaic pile, which—unlike the previously invented electrostatic Leyden jar—provided the first source of continuous current, was reported in a letter dated March 20, 1800, to Joseph Banks, president of the Royal Society of London.

2. The invention was so significant that its mysteries and potentialities quickly permeated disciplines far beyond the sciences. Less than twenty years later, in 1818, Mary Wollstonecraft Shelley

would publish her masterpiece of fictional horror, *Frankenstein; or, the Modern Prometheus*, which described the regeneration of human matter via electric current.

3. Henry Adams, "The Dynamo and the Virgin (1900)," chap. 25 in *The Education of Henry Adams* (Boston: Houghton Mifflin Company, 1918), 379–90. Adams called the dynamo "a symbol of infinity" and "a moral force, much as the early Christians felt the Cross"; ibid., 380. Adams recognized the dynamo as a symbol of modern technology at odds with the traditional values of mythology and religion (which he referred to as "the Virgin"). Adams frequented the Exposition Universelle in 1900 while in Paris working on his publication about medieval architecture and culture, *Mont-Saint-Michel and Chartres* (1904).

4. The artist refers to the plates as electroplates, but in this essay I have chosen to call them electrocoppered plates because the process specifically involves plating copper onto copper.

5. Barney has explained that the original intention for his work on the plates was to incorporate it in his ongoing performative series *Drawing Restraint* (1987–present), in which the artist tasks himself with creating drawings within conditions or situations of self-imposed environmental resistance that challenge the creative process. Early on in the writing and producing of *Redoubt*, Barney thought that in his engraving of the plates in the film he would explore the resistance of the rugged terrain and bitter weather of the Sawtooth landscape. However, as time progressed and the element of dance became more important to the project, he backed off the concept of making this a *Drawing Restraint*. And yet, there would seem to be elements that tie the creation of the copper plates to past *Drawing Restraint* projects in that there is an imposed encumbrance—in this instance, the fact that Barney has largely consigned the making of the plates to an electrochemical process. Thus, there is a mutability to their composition, a mediated mark-making.

6. Some of the plates that appear in the film were actually coated with an ultraviolet (UV) ink as the acid resist (simulating the look of asphaltum) and were plated at Laumont Studio, in New York. The UV ink turned out to be a temperamental resist, chipping and plating erratically. During postproduction of the film, asphaltum was used exclusively as the ground, and the plating was done at Barney's studio.

7. Matthew Barney and Jade Archuleta-Gans, conversation with author, January 31, 2018.

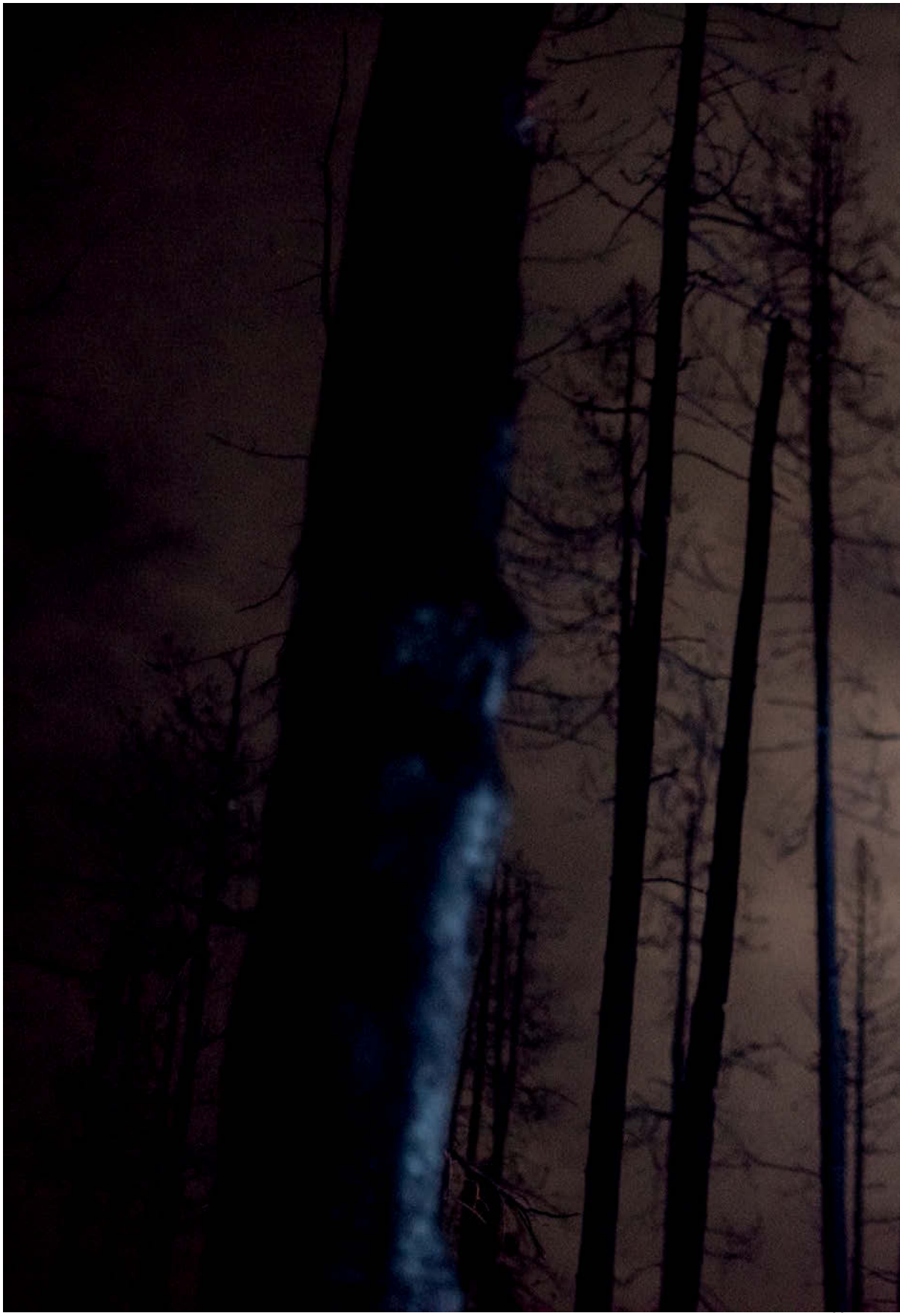
8. Sulfurated potash, or liver of sulfur, consists mostly of potassium polysulfides. It is a metal oxidizer used for creating patinas on copper, silver, and other metals. Interesting for this body of work, it is not an acid but rather the opposite—an alkaline—and turns copper, silver, and some other metals black on contact.

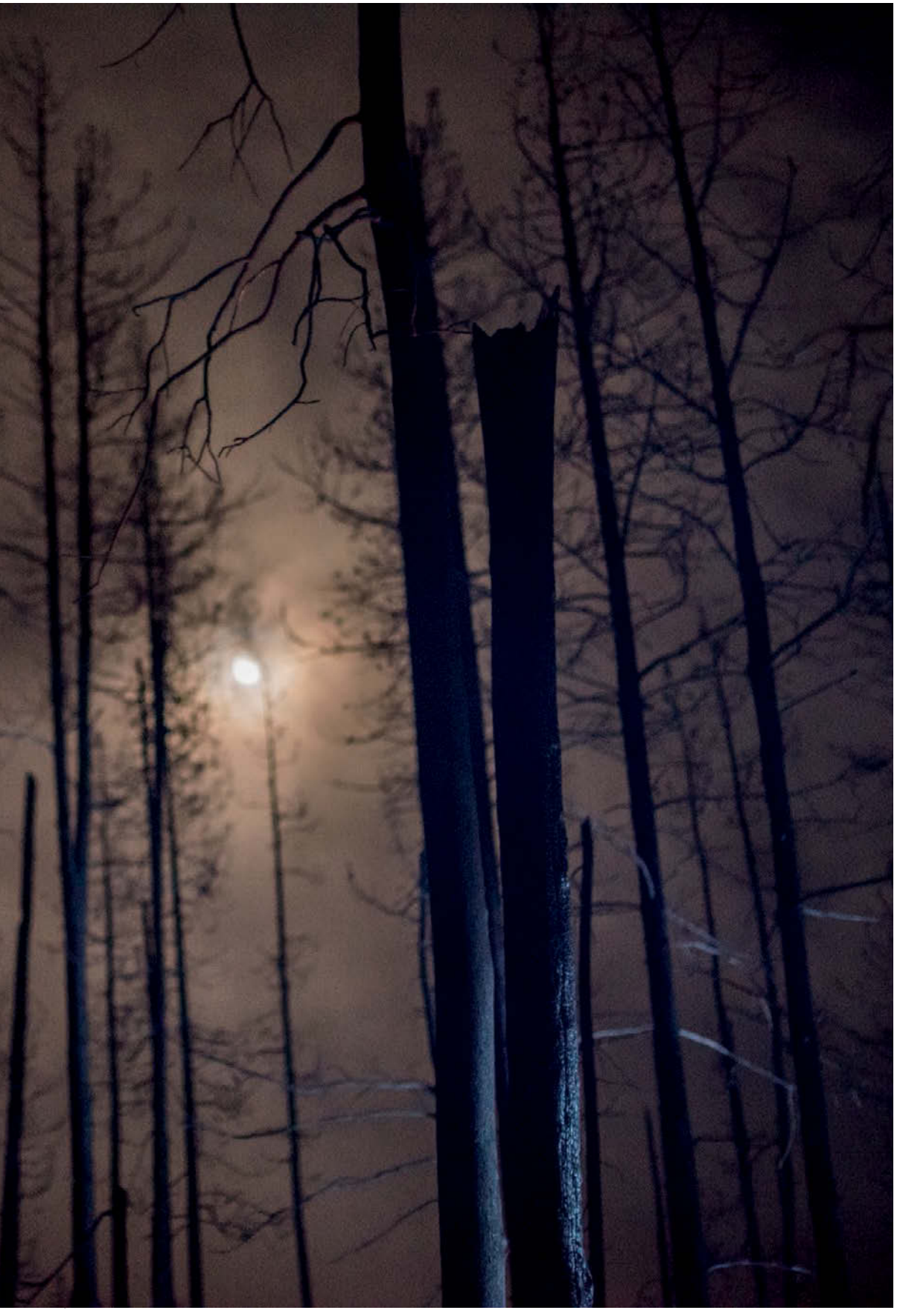
9. Matthew Barney and Jade Archuleta-Gans, conversation with author, January 31, 2018. Originally, Barney had thought of the plates as singular statements and planned to both engrave and electroplate them in the film. But as the electroplating process unfolded and he discovered the rich range of possibilities that were achievable, he decided instead to explore them more fully as series back in the studio.

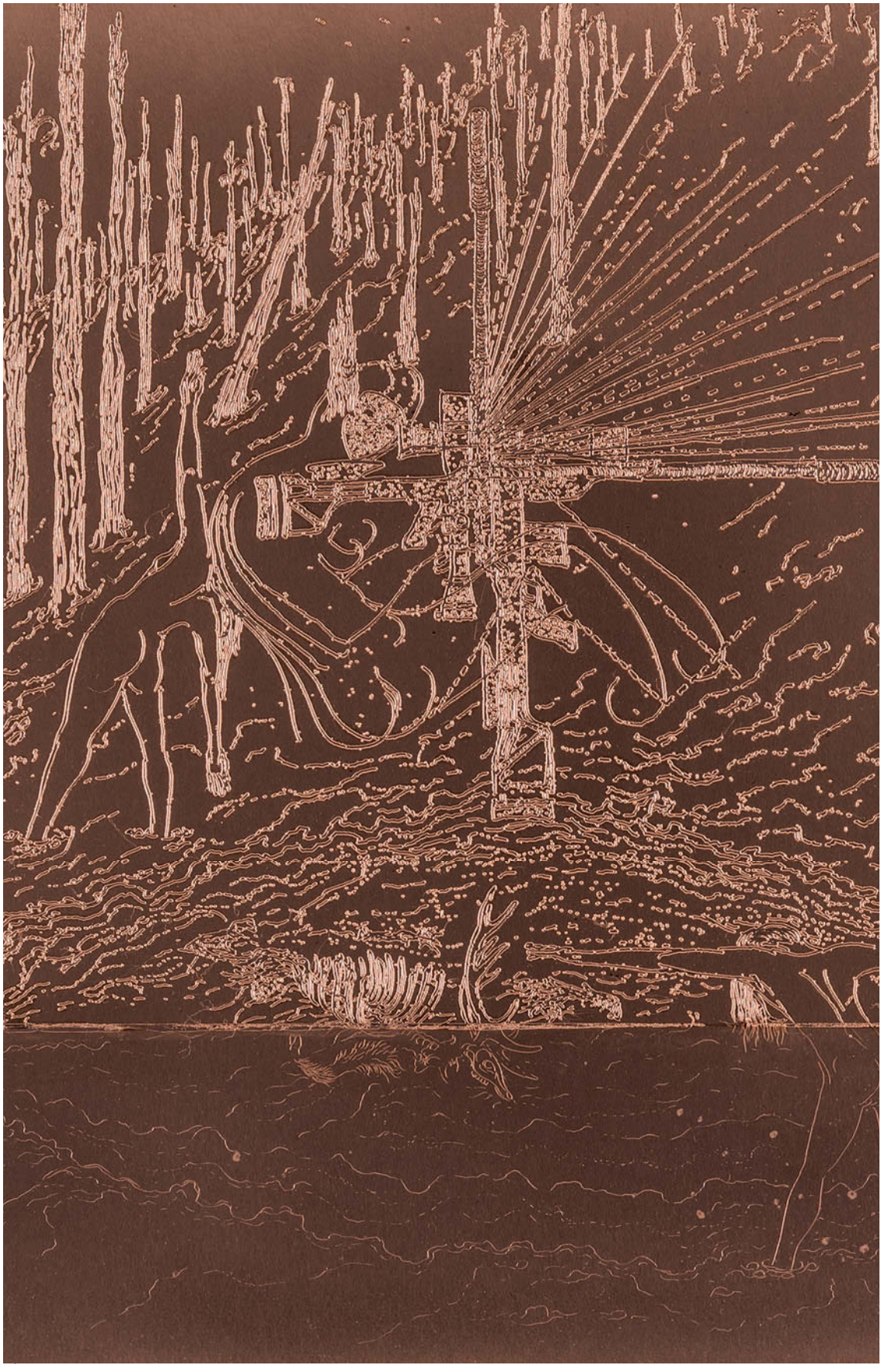
10. The idea of experimenting with the growth of nodules on copper plates via electrodeposition began with a prop that Barney made for his *River of Fundament* project (2014)—a sculpted car part; see Okwui Enwezor, *Matthew Barney: River of Fundament*, ed. Louise Neri, exh. cat. (Munich: Haus der Kunst, 2014), 184–85. In the electroplating process, something went awry with the plating, and nodules began to grow on the edges and back of the car part, which intrigued the artist. Barney's investigations revealed that there was no existing textbook that could teach him how to replicate this process precisely. This led him to make his first fully electroplated sculpture, *Water Cast 14: Yellow Dwarf* (2015), and to further experimentations at Two Palms, the preeminent print studio in SoHo. Eventually, he built an electroplating lab within his studio for the independent continuation of his electroplating discoveries.

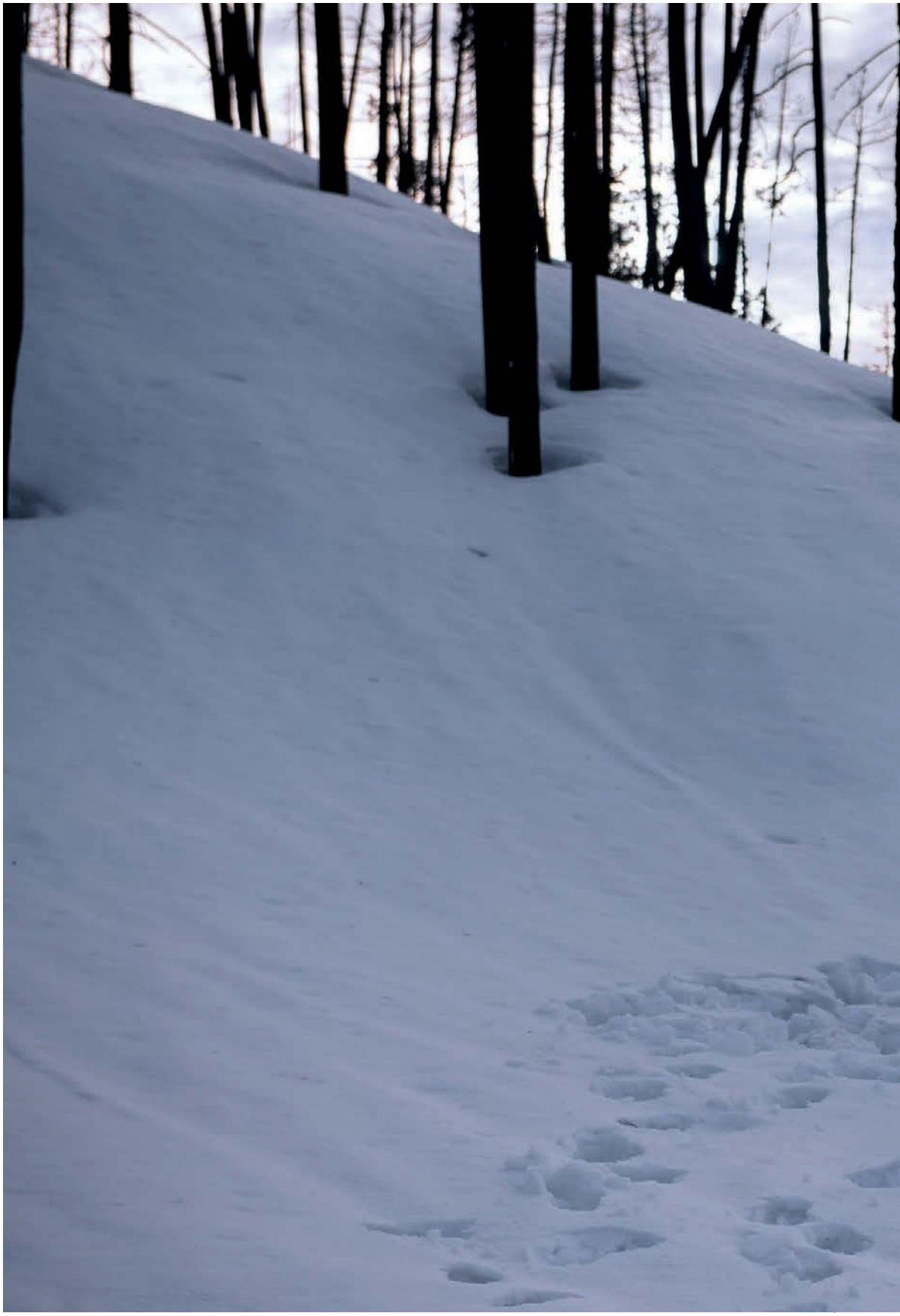
11. In addition to the works included in this publication—the original engravings and the five electroplated states of each image—two other states exist: The first constitutes a complete suite of the seven electroplated images and is intended to be exhibited as an intact group. The second is the artist's own set, an experimental group that Barney undertook after learning more about the possibilities of manipulating the electroplating process.
12. Interestingly—and rather confoundingly—these original plates can be considered akin to traditional print matrices, since the artist has "pulled" multiples from them via digital scanning and laser engraving for electroplating.
13. The plate must be free of any foreign matter that might inhibit proper plating, which could cause nodules to crumble off or the plate to delaminate.
14. I am grateful to Jade Archuleta-Gans, Barney's fabricator and now self-taught electroplater, for patiently describing this complicated process.
15. There was no actual plating done in the film. The "states" of each image that appear in the film were all pre-plated and presented on-screen in a sort of "pre-fab" process, as Barney has described it. The plates that appear in the film are also fairly straightforward electroplating, with none of the gorgeous secondary processes that were subsequently developed in the artist's studio.
16. The order in which the series were electroplated is as follows: *Bayhorse*, *Reintroduction*, *Sawtooth*, *Diana*, *Kill Site*, *Cougar in Bearing Tree*, and *Bivouac*.
17. Matthew Barney and Jade Archuleta-Gans, conversation with author, January 31, 2018.

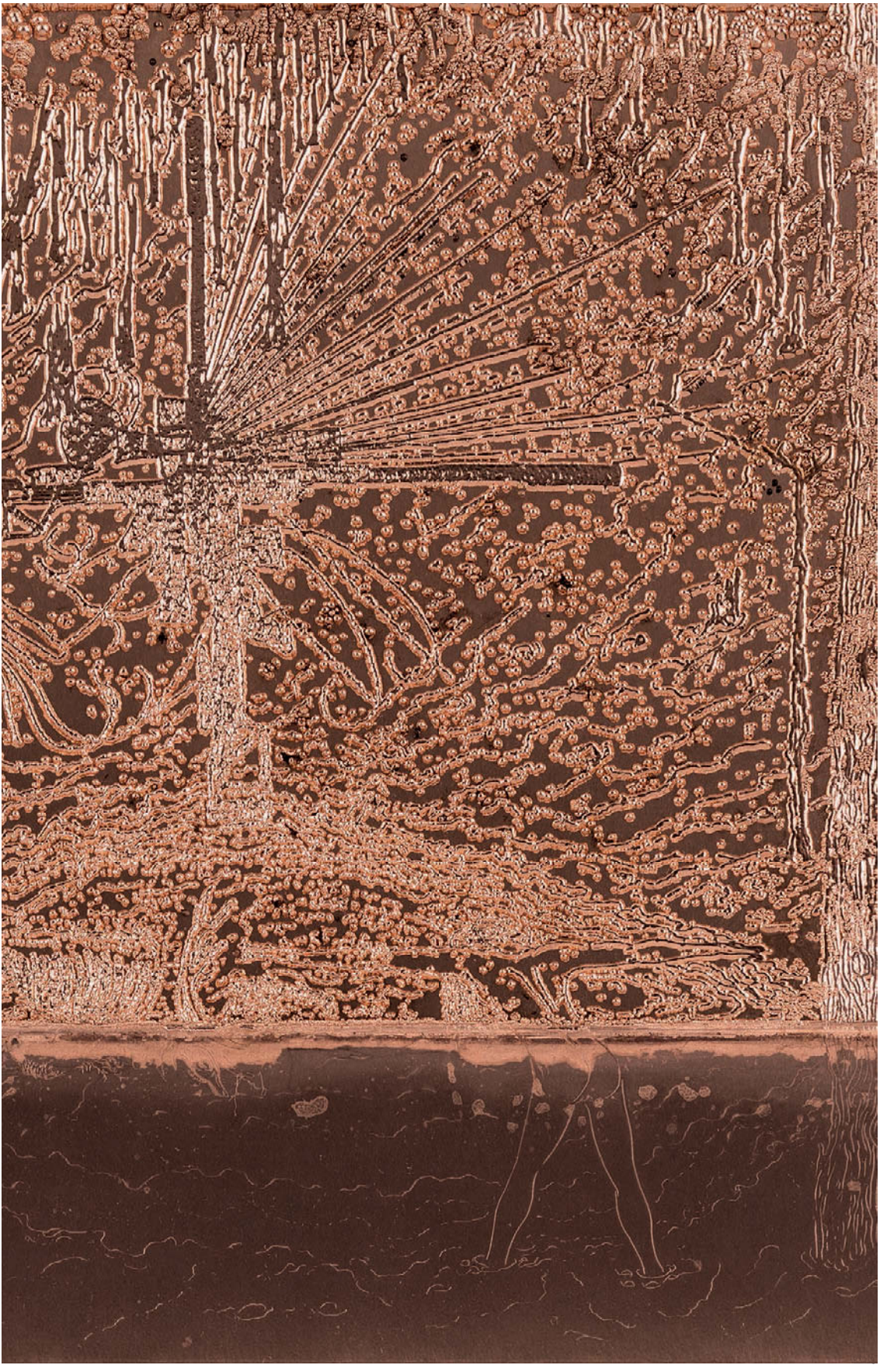
HUNT 4

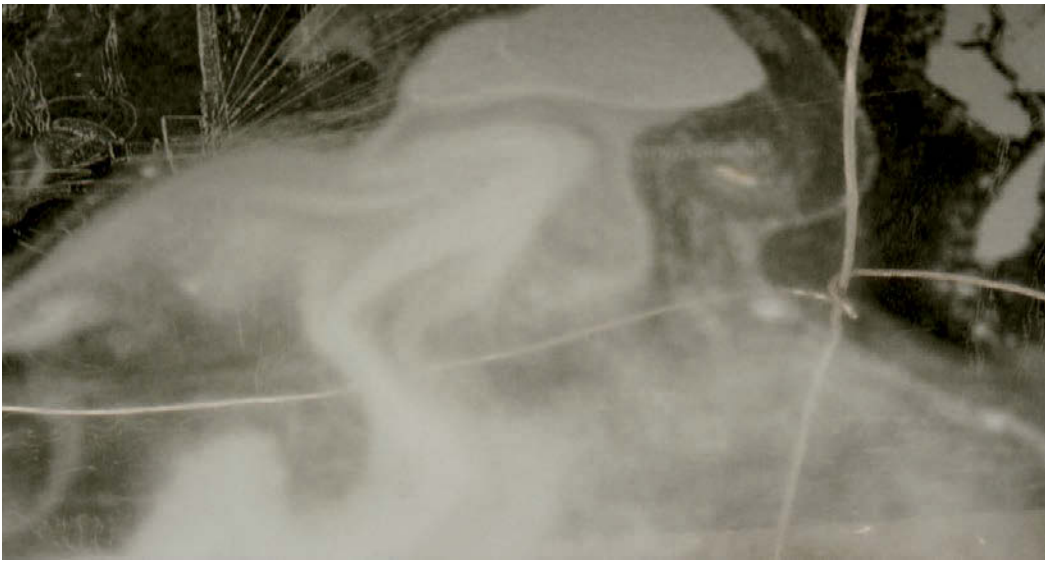


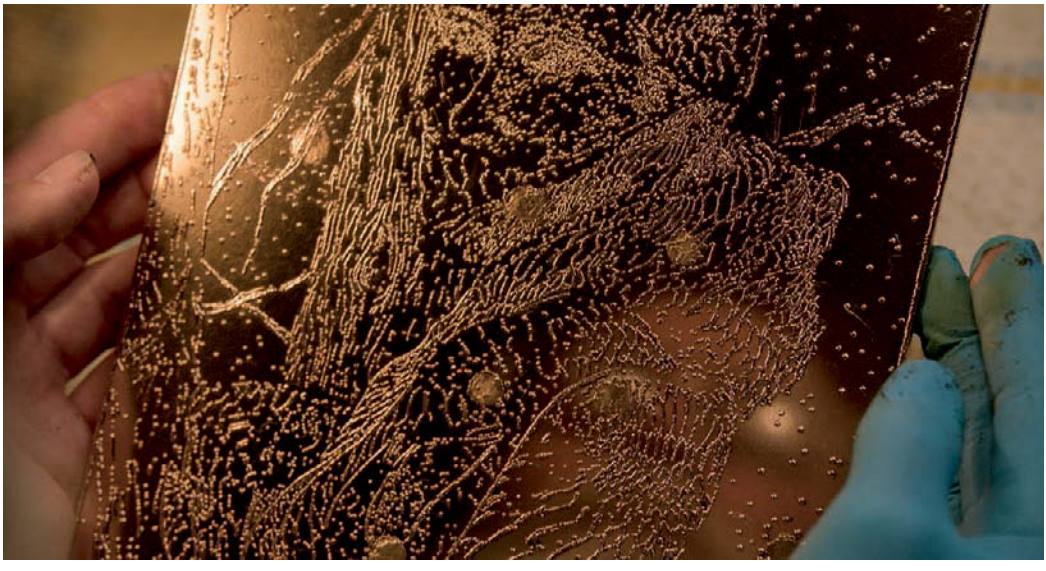


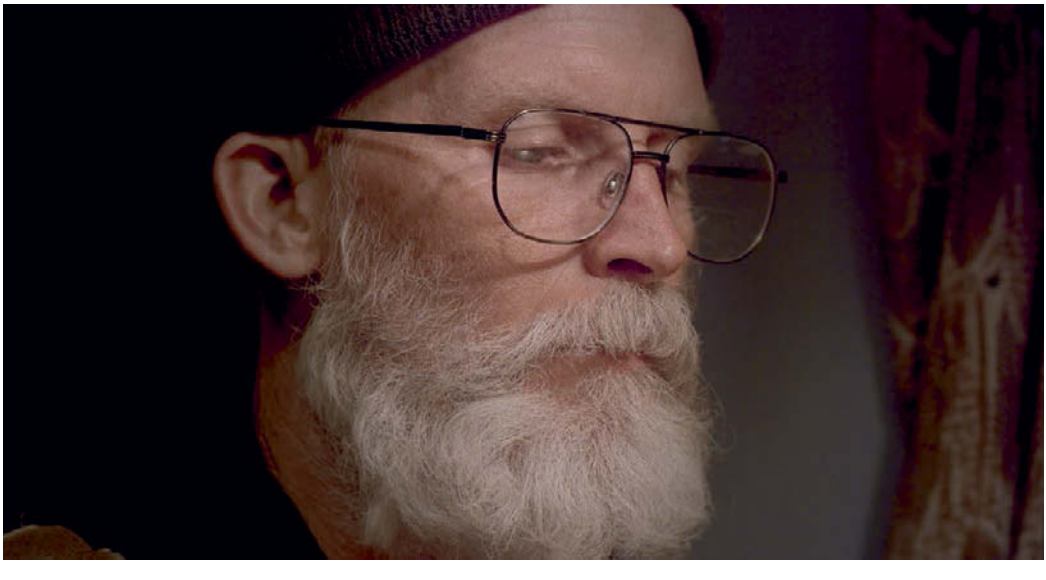


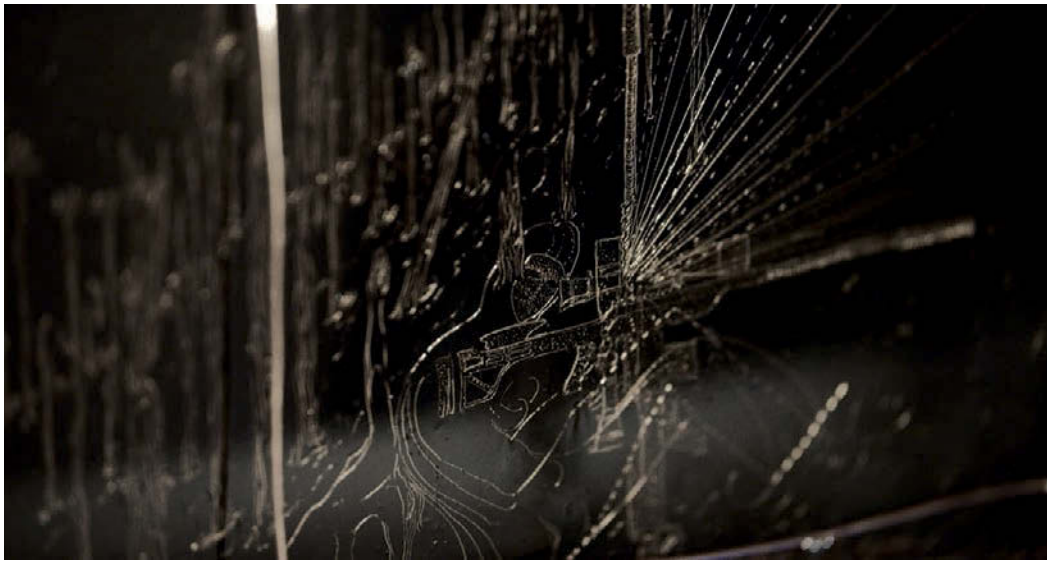












The author with an adult male gray wolf from the Sunlight pack, Sunlight Basin, Wyoming, 2009

TRACKING WOLVES

Arthur D. Middleton

When I was in graduate school, I studied an elk herd east of Yellowstone National Park, near Cody, Wyoming. The Clarks Fork herd, which is named for the river that bisects its winter range, numbers about four thousand. Part of the herd migrates up into the high mountains of the Absaroka Range each summer, crossing into the park. Others stay behind, residing year-round in the foothills.

Elk are big business in Wyoming, as they are throughout the Rocky Mountain states. Locals expect to put a female elk (known as a "cow") in the freezer each year, outfitters guide high-paying hunters to pursue mature males (known as "bulls"), and state wildlife agencies get significant revenue from selling elk-hunting licenses. In the past five years, for example, the Wyoming Game and Fish Department has collected about $10,000,000 annually from between fifty and sixty thousand hunters, who have, collectively, harvested about twenty-five thousand elk.[1] When I started my research in 2007, the migratory portion of the Clarks Fork herd had been declining for a decade. It looked as if past hunting levels could not be sustained for much longer. My job as a researcher was to help the state understand this decline. Specifically, why were the migrants coming back from Yellowstone with fewer and fewer calves each year?

Many of the people I encountered in my work were already sure of the answer: wolves. In 1995 and 1996, under the auspices of the Endangered Species Act, the U.S. Fish and Wildlife Service had worked with British Columbia and Alberta to capture fifty-six gray wolves (*Canis lupus*) and release them into Yellowstone National Park and nearby areas of central Idaho.[2] The new wolf population grew rapidly due to an abundance of prey in the landscape, including large populations of elk, deer, and moose. Within a few years, wolves were dispersing from these reintroduction sites and new packs—typically five to ten adults each—had begun to form in nearby areas. These included the valleys roamed by the Clarks Fork herd. The return of the gray wolf roughly coincided with the onset of the herd's decline in calf numbers. So, it was logical to conclude that wolf predation was the likely cause of the changes.

In the decade before I began my work, several strong narratives had emerged about Yellowstone's wolves and their effects on elk. Many hunters and

outfitters felt certain that wolves were going to decimate the elk herds. They were already at it, they said, killing adult and calf elk—sometimes killing more than necessary and wasting the meat. Meanwhile, many scientists and environmentalists pointed to evidence that wolves favored old and weak elk and argued that a reduction in herd numbers might be good for the ecosystem.[3] Indeed, overabundant elk had long fed on aspen, willow, and cottonwood shoots, thus destroying habitats for other species. So, when wolves were brought back, some scientists were quick to point to patches of new tree and shrub growth, arguing that wolves were protecting them by killing off hungry elk.[4]

These observations excited environmentalists and the media, who embellished them to reach ever-larger audiences.[5] In one 2012 scientific review, for example, biologist L. David Mech documented a laundry list of positive wolf impacts that were reported in media coverage of Yellowstone during the decade after wolf reintroduction.[6] By reducing elk numbers, wolves enabled an increase in the number of bison and pronghorn antelope, which compete with elk for resources. They were also supporting scavengers like ravens and eagles, which get food from wolf kills, reducing the number of coyotes, and reducing the prevalence of diseases that elk carried—diseases that could threaten both livestock and humans. The regrowth of aspen and willow was improving the habitat for songbirds, waterfowl, amphibians, insects, rodents, beavers, and moose. Since these trees and shrubs grew along streams, wolves were almost certainly also helping to reverse bank erosion, improve water quality, replenish groundwater, and cool the waters of the park.

Most of these effects were entirely speculative. They were posed as intriguing possibilities, sometimes in the discussion section of a scientific paper, or in the last paragraphs of a news article that covered the release of new research. But through frequent repetition, they acquired the status of fact. A short video titled "How Wolves Change Rivers," which sets the audio from a rousing TED Talk to stock footage of wolves in the Yellowstone landscape, summarizes many of the claims and has been watched nearly forty million times since it was posted on YouTube in 2014.[7] This popular interest and excitement seemed to feed back into research programs. One master's degree program at Oregon State University was designed almost exclusively to document these effects. The university promoted the group's research with a striking image of a wolf howling (fig. 1).[8] Birds, butterflies, and other flying insects disperse from its gaping jaws. Its lower mandible holds a lake, and a frog rests on its lower lip.

By 2007, one particular question had attracted strong interest from both scientists and Wyoming locals: could the mere *presence* of wolves be causing many of these phenomena? The idea was that wolves might be able to cause

terra
Guardians of the Groves
Top Predators Hold the Key to Biodiversity
Stories That Heal | Nature's Glue | The Zinc Link | Forged in Fire

Fig. 1
Cover of "Terra" 2, no. 2 (Spring 2007), published by Oregon State University

dramatic changes in elk behavior and physiology, regardless of how many elk they actually killed. Because of the increased presence of wolves, elk would avoid grazing where they wanted to graze and thus would lose precious body fat throughout the winter. To facilitate flight when wolves attacked, they would maintain high, unhealthy levels of stress hormones. All of this would cause elk to lose their pregnancies and fail to produce calves in spring. In ecology, these are known as "fear," "risk," or "stress" effects. But the locals are less subtle about it: bumper stickers all around the Rockies, to this day, call wolves "government-sponsored terrorists" (fig. 2).[9]

Many of these narratives differed in their intent, and all of them differed on key details. Yet they converged on one, central proposition: wolves hold immense power, and they bring with them profound change.

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When I began my work, I had a few primary questions: Was wolf predation driving the decline of the Clarks Fork elk herd? And, specifically, were these so-called fear effects playing a role? In early winter each year, I worked with the U.S. Fish and Wildlife Service to put GPS collars on wolves in each of four local packs, and with the Wyoming Game and Fish Department to capture and GPS-collar sixty elk in the same area. The collars would record the

Fig. 2
Bumper sticker sold at the Kinnear Store, Kinnear, Wyoming

animals' locations every three hours and, once retrieved, would allow us to see wolf effects on elk movements in winter.

But I wanted to go further to understand the behavioral interactions of wolves and elk. Though GPS collars can help us see far into the hidden lives of wildlife, a lot can happen in the hours between the locations they record. I wanted to know how sensitive elk were to the presence of wolves and whether their alertness caused them to reduce the amount of time they spent feeding. To do this, I would have to watch those collared elk closely for several winters.

So, from 2008 until 2010, each January through early April, I lived with two field assistants in a cabin in Sunlight Basin—a quiet, sparsely populated valley in the upper Clarks Fork watershed. Our days started and ended in the dark. Some of the largest elk groups, with as many as five hundred animals, frequented the flat valley bottom near the cabin. Other, smaller groups of a dozen or two favored the smaller ravines and mountainsides, and they required tracking by truck and on foot. We would scramble up to high points in the snow, set up our spotting scopes, and scan with the VHF receiver, eventually spying our targets. It was too cold to write by hand, so we narrated their behavior into voice recorders: "*Now she's feeding . . . she's moving . . . now she's alert . . . feeding again . . . still feeding . . . moving . . . now she's bedding down . . .*"

Each night, we returned to the cabin to transcribe the day's recordings onto paper. We drifted to sleep on musty cots huddled near the furnace. Sometimes, we woke up in the night to the popping and crackling of the trees after a snowstorm and, once in a while, to the howling of the wolves as they passed nearby. It was from this tedious fieldwork, the years-long accumulation and averaging of these observations, that I hoped to see how wolves actually affected elk—and, specifically, what their day-to-day behavior was like.

And over those three years, and those hundreds of hours of observation, much of what I had been told to think about wolves slowly fell apart.

During the first field season, wolves did not kill any of our collared elk. This immediately suggested that wolf predation was less important in the area than believed. Once or twice a week, we did find the carcass of an uncollared animal. Often, these were healthy females, but they had been caught somewhere they could not escape—up against a fence or a rock face, or in a morass of burned and fallen timber. Some we found dead along the county road, with steam rising off the warm blood that was still pooling in the rib cage—and only partially consumed. All signs pointed to the fact that wolves killed these cows before dawn, tore open the carcass to feed, then abandoned them when the first truck came down the road. How much of wolves' reputation for wastefulness, we wondered, was due to their fear of people? Over those three years, wolves killed only one of our sixty collared elk; meanwhile, many of the collared elk were shot by hunters during the fall harvest.

Our behavioral observations told a similar story. Observing wolves in the wild is difficult. But watching their prey all day is a good place to start (fig. 3). Still, over three years, I only saw wolves approach elk about a dozen times. Once, I was watching a group of about fifty elk graze on a rolling ridge when I noticed a few of them looking behind a nearby hill. After recording an hour of behavioral observations, I repositioned myself to see what the elk had been looking at. There were twelve dark lumps in the snow—the wolves of the Sunlight pack—less than two hundred yards away. They were taking a nap. The guard hair on their backs fluttered in the wind. Once in a while, a wolf would stand, circle, and flop back down in a more comfortable position. A few elk cows eyed the wolves from time to time, but most of them kept feeding. After a few hours, we were too cold and bored to watch any longer.

Another day, we set up to watch a collared elk grazing in a small meadow. She was with a group of sixteen others. Suddenly, all together, the group swung their heads upslope. A pair of black wolves had appeared above them in the scattered timber. The two wolves sat down to study the elk. The elk bunched together in a defensive formation. But the wolves never attacked. Something about those elk gave them pause—they could find no angle of attack, no weakness to exploit. The elk could see the wolves' hesitancy, and soon relaxed to feed again. The wolves wandered on.

Other times, I saw wolves approach large herds of elk that almost entirely ignored them. In one of those cases, a small band of elk broke free from the larger group, put up their hackles, lowered their heads, and gave chase to the wolves. We were seeing behavior that no collar—nor any other tool at our disposal—could help us measure. As the observations suggested, we were watching prey animals far more sophisticated than the stories we had been told about them.

My analyses backed up what we saw in the field. The GPS collars showed that the wolf packs came within a half-mile of each collared elk less than once a week. After those encounters, the elk would drift a short distance and spend slightly more time alert. Yet they almost never abandoned the places where they preferred to feed, and they did not spend any less time feeding each day. In other studies, we tested to see if the elk that experienced these wolf encounters most frequently suffered any impacts on their body-fat levels or chances of pregnancy.[10] They did not.

Why did wolves affect elk less strongly than we had expected? Part of the explanation may be the inherent limitations on the amount of time wolves spend hunting elk. Wolves have other needs: they defend territorial boundaries, tend pups, and rest after long journeys. When they do successfully hunt and kill, they can be occupied for days feeding on the carcass. Another reason for wolves' limited effects may be that elk are big and are themselves dangerous—they need not always fear the predator because they can repel many wolf attacks. I remember a wolf I collared in early 2010, a big, burly male in the Sunlight pack (see frontispiece to the present essay). His coat of black and white hairs gave him an almost bluish hue. He was dead a year later, in the prime of his life. A U.S. Fish and Wildlife Service biologist investigating his death as a potential poaching case—routine for any wolf mortality in those days—found him lifeless in the snow, with dark holes and bruising in his groin and armpit. Where he lay, he was encircled by a chaos of elk hoofprints, and the spatter of his blood. It seemed a bull elk had hooked him with his antlers, sunk the tines deep into his body, and tossed him off to die. Predators are dangerous, but often their prey are, too. Finally, even when wolves show up, and even when they do pose a very real threat, elk may not react because they cannot afford to. In harsh winters in the mountains, these prey must also avoid starvation.

Many of my memories from those years are fading. But one hangs with me, clearer than any other. I was walking through the forest along Sunlight Creek on a cold, still February morning. It had snowed all through the previous night, and the powder muffled the sound of my steps. The only sounds were the pop and crack of tree branches in the forest around me, and once in a while, the *whump* of heavy snow falling from the tree branches to the ground. Then, suddenly, I heard a loud *yip!* right up ahead. I looked up to see five dark shapes in a small clearing, less than one hundred feet away. It was part of the Sunlight pack. Incredibly, despite their acute sense of smell, and a wariness they have earned from centuries of being tracked and hunted by humans, these wolves had not noticed me at all. I stood there, as still as I could, and watched them. They were rousing from sleep, one by one. Four of them milled about for a while, wagging their tails and playing together.

Fig. 3
A bull elk, after retreating to a river for refuge from three wolves, charges to defend himself

A big male watched them and snarled when they stumbled too close. After a few minutes, they wandered on, vanishing one by one into the falling snow.

This encounter shocked me—partly because of its abruptness, and partly because of its duration. But I was also shocked by another feeling. Confronted so immediately with wolves, I had no time to invoke any expectations. This was when I realized I had always been comparing wolves to what I had read, and heard, and learned. I had been trying to fit all my observations of wolves in the field to models I had inherited from others. But here and now, caught off guard, I could see them free of the burden of all our stories. I could see them simply as they were.

—

In his classic 1978 work *Of Wolves and Men*, American author Barry Lopez enumerated humans' myths about wolves. They are enormous in size. They travel in immense packs. They kill whatever they please. They are vicious and wasteful. They howl at the moon and go crazy at the smell of blood. Lopez sought to work against these myths, to find reliable scientific information about wolves. And he was surprised by how little we knew. If there were roughly eight thousand wolves in Alaska, he wrote, after accounting for the number of days in a year and the typical number of wolf sightings by researchers, "observed behavior amounts to about three one-thousandths of a percent of wolf behavior." Given the strength of myth and the paucity of data, he concluded, "To be rigorous about wolves—you might as well expect rigor of clouds."[11]

I am conflicted about Lopez's insight. For the most part, I agree with him. Like many others in my chosen field of wildlife ecology, I was drawn to the study of nature, from my earliest days, by the outsize power of animals in our imaginations. When I was a boy in South Carolina, there were many snakes in the forests and swamps, and when I found one my grandmother would make me kill it with a garden hoe. In the dark brown waters of the creeks we swam in, there were porpoises and alligators that seemed larger than life, and crabs, stingrays, and jellyfish that bit and stung. Later, in college, I studied literature, and from Chaucer to Milton to Melville, good and evil were as commonly embodied by animal characters as by human ones. Now, as a father, I read stories to my daughter every night that feature animals at the center of her early moral education. Our world would be less interesting and less beautiful without our complicated relationships to the animals we live with—without our stories and our myths.

And yet, I also believe in science, its methodologies and its rigor. Just as we need myth to build and transfer meaning across generations, we need reliable ways to vet knowledge and to help us make wise decisions. I believe science is especially important to the future of our environment because we are confining species—including wolves—to ever-smaller spaces, where their populations are increasingly sensitive to our decisions. Coexisting with wild animals now requires more foresight than it ever has before, and those decisions are better when they are built in part upon reliable science.

In the case of the Clarks Fork elk herd, casting aside strong hypotheses about wolf effects meant I had to look harder and further for answers. When I followed the elk to their summer ranges inside Yellowstone, I found that a severe drought was limiting their summer nutrition, and grizzly bears were killing their calves.[12] The state of Wyoming used these findings to help explain to the public why intensive wolf hunting would not bring back the elk herd. Wolves are still hunted, but at levels that protect them from our worst inclinations and from the excess that caused their original loss from the landscape.

Since completing my work in the Clarks Fork in 2010, other studies have documented wolf effects on elk populations and the varied landscapes of the Rocky Mountains. In aggregate, they illuminate how the nature and strength of these effects depend on terrain features, snow depth, interactions with other predators, and a host of other factors that vary across the landscape, or even from year to year in the same locality. This variation means that interactions between the same players can have very different outcomes. In a few areas of the Rockies, wolves have driven large declines of their prey, and in others, they have had little impact.

Nearly every story about wolves is true in one place and time, and yet false in another. We choose which stories to elevate and which details to emphasize, as well as which to ignore. We choose how we weave them all together into something bigger. And in this way, the stories we tell about wolves may forever tell us more about ourselves than they do about the animal.

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2. For more on the reintroduction of wolves to Yellowstone National Park, see the essay by Pamela Franks in the present volume.
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6. L. David Mech, "Is Science in Danger of Sanctifying the Wolf?" *Biological Conservation* 150, no. 1 (June 2012): 143–49.
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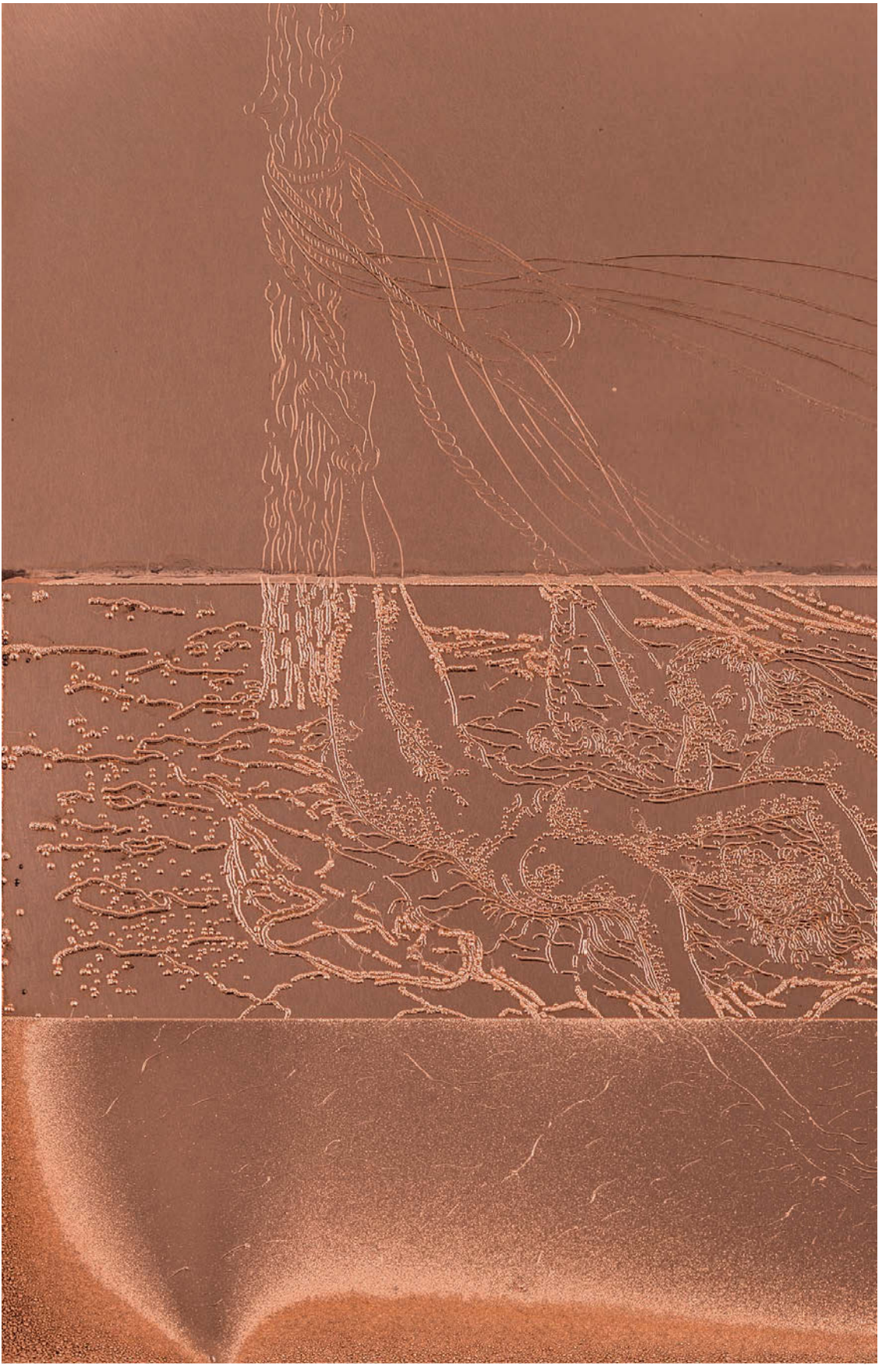
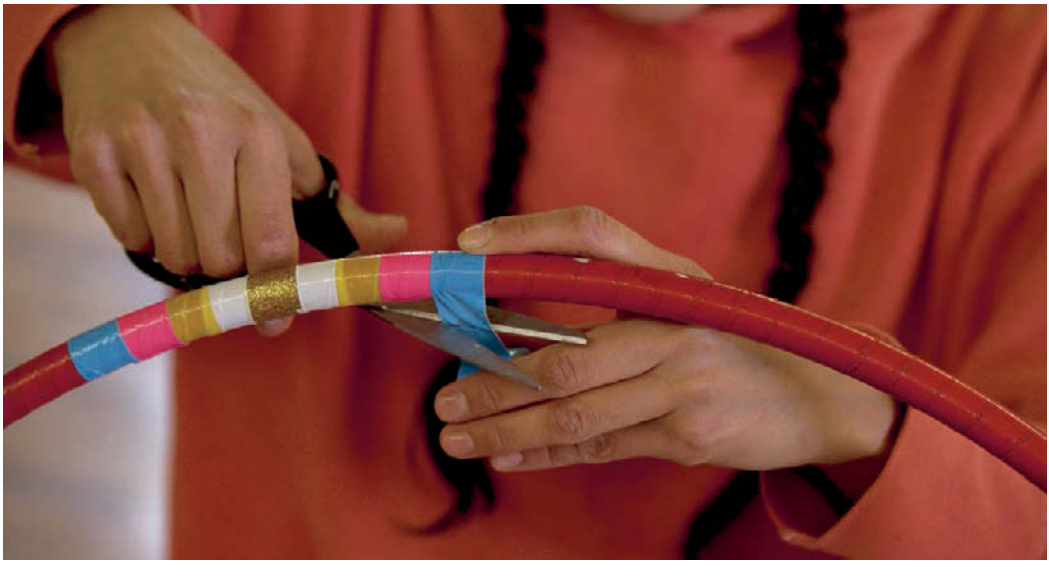
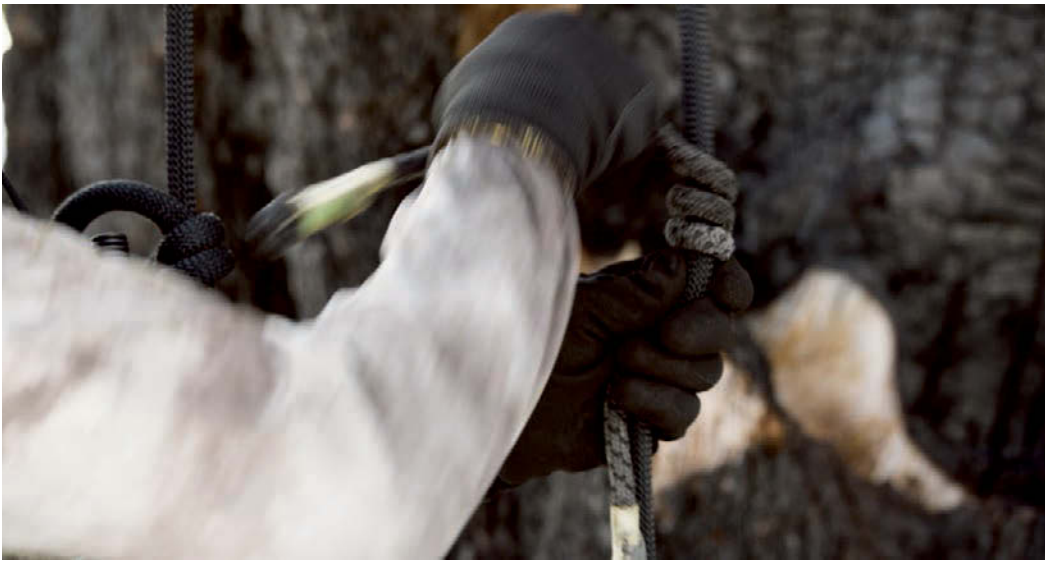
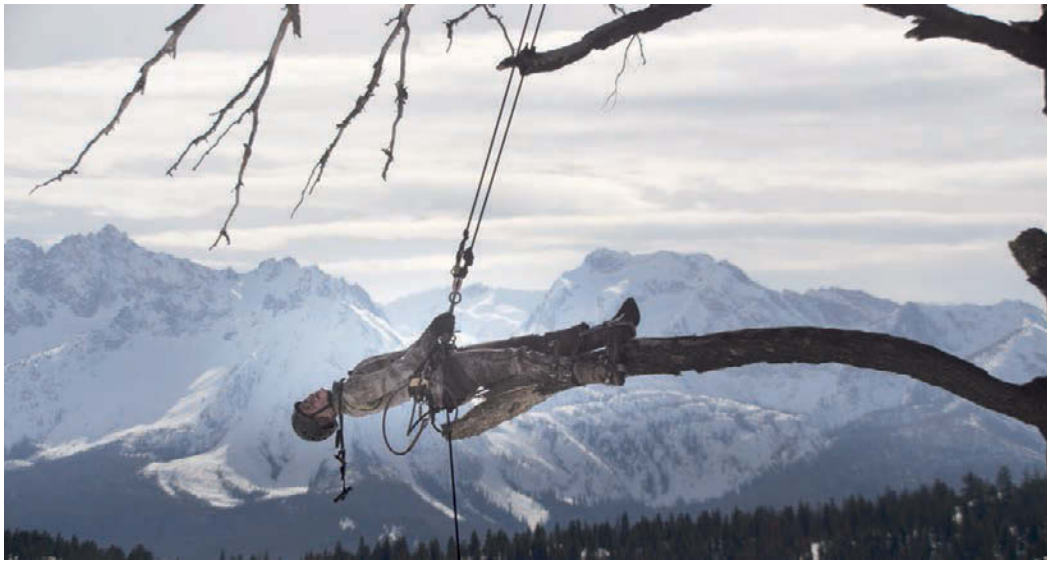
11. Barry Lopez, *Of Wolves and Men* (New York: Scribner, 1978), 3 ("observed behavior") and 5 ("to be rigorous").
12. Arthur D. Middleton et al., "Animal Migration amid Shifting Patterns of Phenology and Predation: Lessons from a Yellowstone Elk Herd," *Ecology* 94, no. 6 (June 2013): 1245–56, https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/11-2298.1 (accessed September 10, 2018).

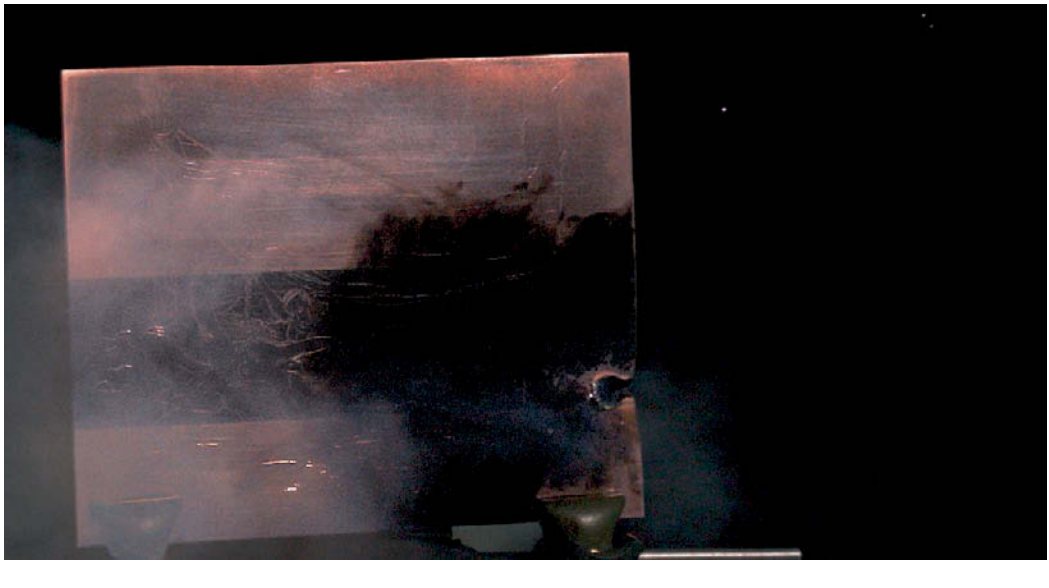
HUNT 5

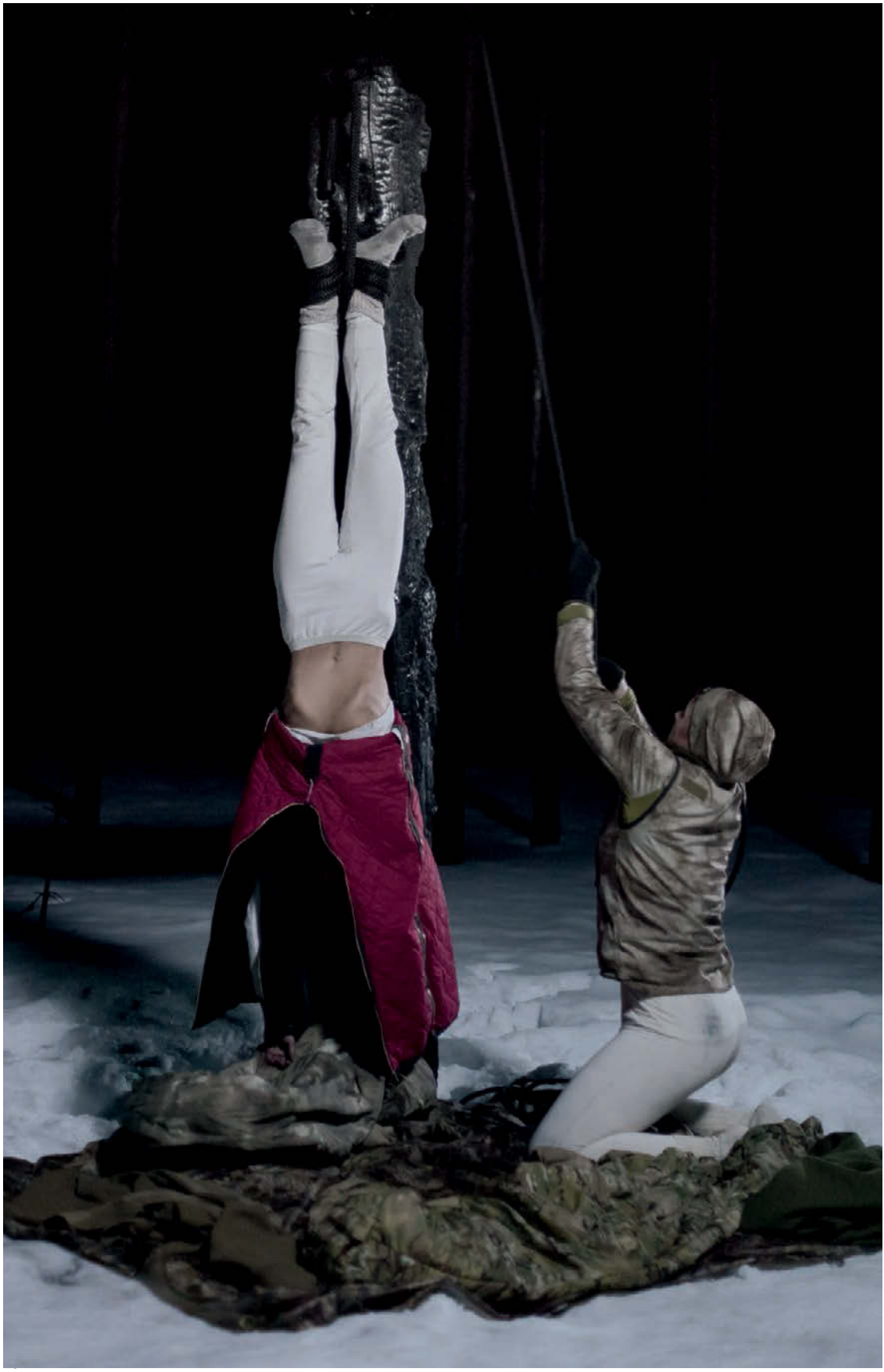












Steel instrument tower at Harrys Ridge used in the geodetic monitoring of Mount St. Helens

MOVEMENT IN THE SEVERED

André Lepecki

I

In the first movement, we approximate.

The opening shot of Matthew Barney's *Redoubt* has the camera gliding over a smooth, white surface filling up the whole screen, slowly descending toward a darkened circular gash in the snow. As the black hole nears we realize: the gash is a heap. Of meat, bone, fur, and blood. Above, birds of prey close in, capping the heap's dome, delineating the kill zone, drawing the event's horizon.

In the following movements, we distance.

Or rather: in the following movements, the film announces the theme of distance. As five of the six characters in *Redoubt* are introduced in the opening sequence and Hunt 1 (the last character, the Hoop Dancer [Sandra Lamouche], makes her appearance in the crucial Hunt 5, precipitating, as we will see, the dramatic crux of the film), each appears with a specific "movement trait." Yet, despite their differences, they all share a self-absorbed remoteness. Whether they go about the land or stay put, in the redoubt mostly everyone keeps their distance. Diana's (Anette Wachter's) movements are teleological: she moves in straight lines and stays focused on her search. She telescopes, tracing vectors of pursuit and then following them, no matter the conditions of climate or ground. She is distant: from her attendants in the hunt—the Tracking Virgin (Laura Stokes) and the Calling Virgin (Eleanor Bauer, who signs most of the film's choreography[1])—from her prey, and even from her nemesis, the Engraver (Barney). The two Virgins move in consonance. They are a self-concerned pair, a kinetic dyad: echoing, reflecting, and refracting each other's actions, static poses, and semaphoric gestures. As for the Engraver, he adheres to and follows the gradients of the terrain. He zigzags, he climbs, he strolls, he stumbles—his footfalls trace the obverse of the ground, its grooves and faults. If he approaches, often burdened by his artist's or surveyor's paraphernalia, it is only to stay at a distance from what he searches. Finally, the Electroplater (K. J. Holmes) stays put. She dwells by herself in the trailer where she receives the Engraver and treats his copper-plate engravings with an electrolytic solution and electricity. She dances in circles and arcs of circles, either inside the

trailer, orbiting around a precarious wire-and-cardboard model of the constellation Lupus, or out in the open, revolving around her own axis, indicating and tracking other orbital bodies, chunks of minerals, gas, and radiation that circle high above in the indifferent sky.

Four kinds of movement, then, in the redoubt: vectorial (Diana), consonant (the Virgins), adherent (the Engraver), and circular (the Electroplater). While, in the small urban outpost appearing in Hunt 5, a fifth kind of movement gathers force: the spectral-spiritual movement of the Hoop Dancer. While, high above, the stars appear to rotate, the sun eclipses, the moon hovers, birds circle. While, on the ground, the heap is a gash, meat is torn by predators, or simply rots away, becoming soil. While, on the ground: the hunt is afoot.

II

In his short essay "The Image—the Distinct," French philosopher Jean-Luc Nancy reminds us of the profound relationship among image, distance, and what he calls "the distinct."[2] For Nancy, the image is, above all, the "severed"—whatever has been cut off, whatever has been removed from the mundane, whatever distinguishes itself from daily matters by its remoteness. The "severed" names the redoubt, where images move at a distance.

The whole of *Redoubt* turns around ongoing calibrations of distances: the distance between nonhuman animals and humans; the distance between hunter and prey; the distance between artist and art objects; the distance between cosmic forces and human antagonisms; the distance between Native American cosmogonies and Greek mythologies; the distance between the forces of Earth, indifferent to human passions and lives, and the mythological-aesthetic-political impetus of humans striving to tame those forces, and in that process turning Earth into "Nature." The asymptotic lines delineating the movements between the six human protagonists in the film—and between them and the animals they hunt or track (wolves, mountain lions) or that aid in the different hunts (horses, hounds)—track and measure those distances, pacing the film's taut cinematography and turning *Redoubt* into filmic choreography.

But, whenever there is distance, there must also be degrees of proximity. In the film's prologue and in each of its six hunts, Barney sculpts and explores variations of those degrees. Wolves, eagles, humans, planets, and stars criss-cross Idaho's vast white-snowed, quasi-empty, mountainous wilderness, in a quietly paced yet increasingly entangled dance. As a whole, the six hunts compose a meta-choreography, delineating the ever-shifting constellations

that all the celestial and terrestrial bodies in the film—whose relative motions determine the unfolding of the hunt—create between them. *Redoubt* dramatizes and tracks how each of those bodies moves along its own seemingly solitary track in a complex tangle of intra-related, even intimate, trajectories: a heap of rotting flesh draws in scavenging birds, whose circular movement above mirrors the apparent movement of the stars; the movement of the sun and moon pace the diurnal and nocturnal rhythms of Diana's hunt. No wonder the whole film is punctuated by shots of the starred sky, of the full moon, of a solar eclipse—cosmic reminders of the kinetic refrain that draws all bodies into a generalized condition of intra-active, orbital co-movement.

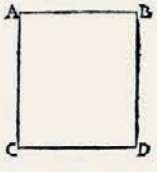
III

The drama of tracking the movements of bodies as the foundation of a new art, one capable of describing and prescribing universal laws for human motion: nothing could better express the project of choreography since its inception in the seventeenth century—and particularly since its disciplinary-scientific consolidation throughout the eighteenth century. Choreography was the first original, aesthetic invention of modernity; photography and cinema followed, propelled by the same impetus that informed choreography, the capture and representation of bodies as images in movement. The word *choreography* appeared in print for the first time in 1700, in Raoul-Auger Feuillet's *Chorégraphie, ou l'art de décrire la dance, par caractères, figures et signes démonstratifs*, commissioned by King Louis XIV, who in 1662 had created by decree the Royal Academy of Dance, in Paris.[3] In this foundational book, Feuillet set choreography's ideal location away from the world. Choreography would remove dance from the fairs, festivals, and streets; it would sever dance from other spaces in which it traditionally took place. Instead, it would happen in an enclosed room, which Feuillet represented with an empty white square demarcated at its four vertices by the letters A through D (fig. 1). On this flattened, abstract, and empty space, Feuillet placed a dancing body, represented in *Chorégraphie* as a half-circle with its bisecting line extruding a bit on each side and also surrounded by letters, in this case F, G, H, I (fig. 2). Choreography carves for its motions a shallow space and a fleshless body, both as thin, flat, and smooth as the white-paper surface on which steps will be traced in order to be tracked (down). As an "apparatus of capture," as a novel technology for tracking and managing movement, choreography emerges as a severing machine—taking from space the grooves of the ground, the gradients of the terrain, and taking from the body the flesh,

LA DANCE. 3

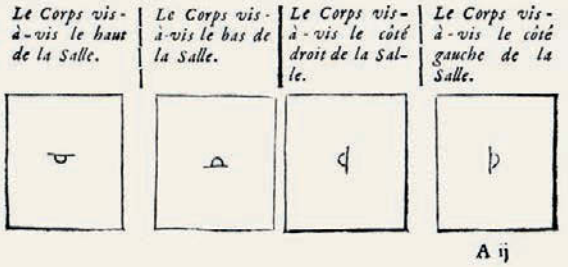
DE LA SALLE OU THEATRE.

LA Salle ou Theatre eſt le lieu où l'on dance, que je repreſente par un eſpece de quarré plus long que large, comme marque la figure A B C D, dont le haut ſera A B, le bas ſera C D, le côté droit ſera B D, & le côté gauche ſera A C.



De la preſence du Corps.

LA preſence du Corps eſt quand le devant du Corps eſt vis-à-vis l'un des quatre côtez de la Salle, que je repreſente par la figure F G H I, dont F G marque les deux côtez du corps, H marque le devant, & I marque le derriere.


Le Corps vis-à-vis le haut de la Salle.
Le Corps vis-à-vis le bas de la Salle.
Le Corps vis-à-vis le côté droit de la Salle.
Le Corps vis-à-vis le côté gauche de la Salle.

A ij

FIG. 1
Raoul-Auger Feuillet, "Chorégraphie, ou l'art de décrire la dance, par caractères, figures et signes démonstratifs" (Paris, 1700), 3

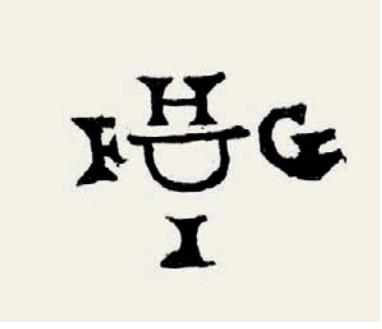


Fig. 2
Detail of fig. 1

and its tremors.[4] But, if choreography tracks movement, it is only because it knows that movement is always that which, inevitably, escapes. And, if choreography is interested in bodies, it is only to guide them so that they may move according to very precise ideals of what movement should be or do.

As an apparatus of capture, choreography contains a temporal paradox that *Redoubt* makes explicit. Under its logic, the tracking of movement is always, and simultaneously, a *retrospective* exercise (it records where a dancer, or a target, moved) and a *prospective* one (it directs where a dancer must move to, so her steps and her partner's—or target's—may intersect, eventually). The choreographic exposition of such careful, multiple, kaleidoscopic, deeply parallactic, and constellational cross-tracking of self-absorbed motions weaves *Redoubt*'s entangled temporal lines: an animal's set of footprints conditions Diana's future path as hunter, while the slow motions and cryptic gestures of Diana's attendants across the land anticipate what is about to happen—with the film's other characters, or with their prey.

Throughout the film, Eleanor Bauer, the Calling Virgin, methodically explores the anticipative temporal logic of choreography. Her movements with Laura Stokes, the Tracking Virgin, are, above all, predictive. Whenever a significant event is about to happen, the two dancers perform its unfolding, in advance. Being in advance of the event is to occupy the realm of the virtual. It is to move in, and to be moved by, that very real yet "transcendental field" that the twentieth-century French philosopher Gilles Deleuze called the "plane of immanence."[5] On this plane, micro-anticipatory quasi-events occur in the smallest fraction of time possible before their condensation, or actualization, *in* and *as* the actual.[6] Dancing the event, it is as if the two Virgins rehearse

future lines leading toward, and emanating from, the kill. They track and call less Diana's prey than the effects deriving from the event of the kill.

Thanks to this temporal logic, *Redoubt* makes clear that the anticipatory capacity of the dancer corresponds to the predictive quality of the hunter. Dancer's and hunter's capacities and qualities correspond at this level because both know that all movement follows the nonlinear logic of the virtual, and both know that all action eventually has mortality as its horizon. (Choreography as a system of transmission of movement is profoundly aware of two types of evanescence: of the dance, in its constitutive ephemerality; and of the dancer and choreographer, in their constitutive mortality.) The acknowledgment of mortality as a condition of the flesh, human and nonhuman, is the first step toward an ethics of dance, away from a severed, distant choreography that is only concerned with disciplined and representational human motions. As French philosopher Jacques Derrida stated, "Mortality resides there, as the most radical means of thinking the finitude that we share with animals, the mortality that belongs to the very finitude of life, to the experience of compassion."[7]

IV

As shown repeatedly throughout the film, Diana is a master in the art of gunnery. Her tent is a well-equipped arsenal, and Barney's camera reveals all sorts of high-precision rifles, hunting bows, crossbows, arrows, bullets, bullet casings and shells, vats of gunpowder, and telescopic lenses, and a bullet-swaging machine that Diana manipulates. Thus, the character of Diana introduces into the film not only the choreographic theme of tracking but also the relation among tracking, choreography, and the science of ballistics. Indeed, if the tracking of trajectories leading to a specific movement defines choreography, and if the tracking of trajectories leading to a specific target defines the science of ballistics, then Diana's motions and steps, her entire corporeal attitude, incorporate both, demonstrating the intrinsic relationship between choreography and ballistics. In ballistics, lines of flight, lines of hunting, lines of topographic gradients, and lines of movement entangle and disentangle in a permanent and paradoxical choreographic tension (fig. 3). For, once the hunt is afoot, the hunter knows what every dancer also knows: that each footfall reverberates, viscerally and affectively, with the ground she treads upon; that the ground will never have been planar; that her movements will never have occurred on a flat stage severed from the earth. Each step tells both hunter and dancer that her body and gestures are part of the affective-vibrational terrain delimited by death. As the literary and postcolonial theorist Paul Carter writes,

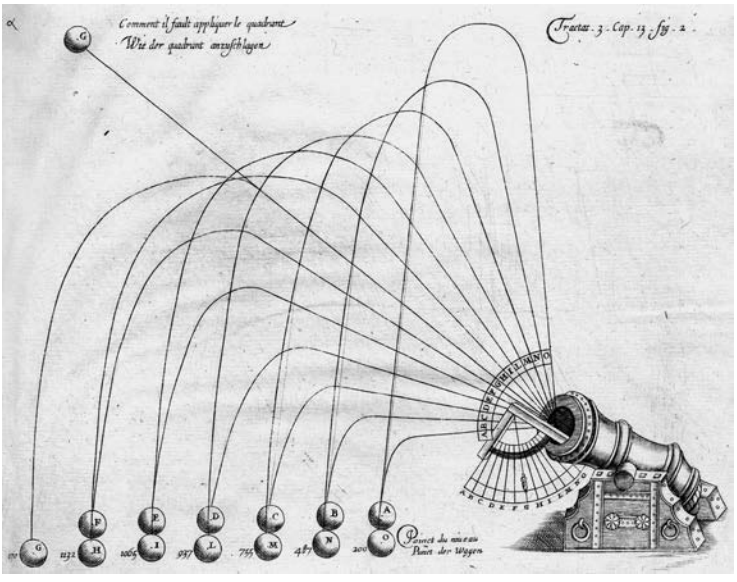

Comment il faut appliquer le quadrant
Wie der quadrant anzuschlagen
Tractat. 3. Cap. 13. fig. 2.
Planet des mauvais
Planet der Wygern

Fig. 3
Ballistics diagram showing how to assess trajectories, 1664

in ways that remarkably resound with Barney's choreo-poetics in *Redoubt*, "to bring the environment and the figure moving in it into a significant relationship, not only a poetics is needed but a theory of ballistics."[8] This sentence could have been the film's epigraph. Ballistics reminds us that the flight of spears, arrows, or bullets "does not arc over an empty space" but rather "denominates a common ground, knitting its topography together, reuniting it in an event."[9] What emerges from that textured movement is the event of ethics. Ethics is the hunt's and choreography's only redemptive quest, the only redemptive project for the hunter's and the dancer's redoubtable movement-drive.

Diana aims and shoots. But her first bullets fly toward the Engraver's plates, on two different occasions: the first diurnal, the second nocturnal. Yet, before those two shots were fired, the Virgins had already performed Diana's killing of a wolf, the event that ends her quest in Hunt 6. In Hunt 3, the Tracking Virgin, perched on a high branch of a tall tree, tumbled down as if hit by a bullet, her fall controlled by a black rope around her waist (Stokes is a rope artist). And, in Hunt 5, the Calling Virgin gently undressed the fallen and inert body of the Tracking Virgin, as if skinning her—slowly rolling down the deep red inner lining of the Tracking Virgin's trousers, revealing her tights as white as scrubbed bone. Then,

with a thick rope, the Calling Virgin lifted the Tracking Virgin's inert body up a tree by her feet, as if she was lifting a carcass. In their anticipatory time, the two Virgins have choreographed the future gestures of the Engraver. Because, eventually Diana will kill: at a distance, choreographically measuring gradients of proximity, anticipating parallactic distortions, and aiming her bullet at the location her prey will eventually be in, the spot virtually charged with the future kill. But if Diana does the killing, it will be the Engraver who will sink his hands into the animal's dead flesh and skin the wolf, which he suspends on a tree, just as the Calling Virgin had undressed and suspended her sister the night before. The Engraver's methodical skinning of the wolf unknowingly repeats the Calling Virgin's gestures of the previous nocturnal scene.

Now that killing has taken place, we can finally see that the redoubt had never been, after all, one. The supposedly indomitable and severed realm—inhabited by para-mythological self-moving images (the film is loosely based on the myth of Diana and Actaeon)—is already leaking everywhere, being swarmed in on from everywhere, and being haunted from everywhen. Indeed, from that point in the film onward, we can see (retrospectively and prospectively) how the severing of a slice of world away from the world, how the building of a redoubt, is nothing more than the enactment of yet another violent force accompanying choreography's own feral impetus of flatting out space, time, social life, and bodies. That haunting force is called colonial violence.

V

The spectral and not-so-spectral presence of this inaugural, colonial bloodletting, of this invisible bloodletting that nevertheless splatters and gashes the redoubt, completely recasts the force and centrality of the hoop dance performed in Hunt 5 by the Canadian First Nations choreographer and dancer Sandra Lamouche, of the Bigstone Cree Nation, in an empty meeting hall of an American Legion post, during the only appearance of an urban space in the film. Indeed, her hoop dance rearranges the whole temporal continuum of the film. The dance pushes the film to its end, but it also reshapes the film's beginning. Just like the electrochemical solutions that decompose the Engraver's plates throughout the film, the hoop dance operates as a corroding agent, undoing from within the film's narrative, creating a new film out of its effects.

The Engraver drives up to town. As he walks down a deserted street he stoops for a few seconds by the open front door of the local American Legion post. He stares at the Hoop Dancer, who kneels on the floor of the empty hall, decorating her red hoops with colorful stripes. Silently, they exchange a brief

glance. The Engraver then continues strolling down the street toward a bar, where he sits away from the few other patrons and proceeds to draw a figure of a wolf in pencil. In front of him is a coffee mug with an American flag on it. It is from the brief exchange of glances at a distance between the Engraver and Hoop Dancer that the film starts building its dramatic arc toward Diana's killing of a wolf in the final hunt. Between sequences showing Diana's head being carefully manipulated by the Tracking Virgin, who directs Diana's gaze as she scrutinizes the horizon with a pair of binoculars, and sequences showing the Calling Virgin, nearby, climbing up a tall, charred tree, reaching its top and, lying between branches, howling to the sky, startling a pair of wolves in the far distance, who then howl back in a sonic entanglement of hunter and prey, the Hoop Dancer performs her dance.

She distributes nine red hoops in a wide circle on the floor of the empty hall. Stomping and skipping rhythmically and silently on and over the hoops, she picks them up one by one, and quickly and improbably passes her whole body through them—from head to toe, and back. She hops, she dances in circles, she links the hoops into long chains. She creates large structures that extend her body in formations reminiscent of wings, horns, and tails. The hoops are holes—and wholes—that her body moves through, and from which she emerges each time in a new state of becoming: elk, eagle, wolf. Leaning on the ground as she stomps on and over the red hoops, she does not track, or give pursuit. Rather, she weaves the ground's holes into a new texture, mixing actuals and virtuals, past, present, and future, hard matters and nimble spirits, reminding us that a ground is but "an infinity of holes held together by well-timed feet."[10] But because she not only moves through the hoops but also hops over them, the hoops are also heaps. Maybe of meat, bone, skin, and blood—just like those that sprinkle the landscape of the redoubt. Heaps of human-animal blood. Wells of human-animal blood.

As already discussed, *Redoubt* opens with a heap of flesh and bloodied bone punctuating a white, flat surface. However, several other carcasses of animals dot the landscape throughout the film, puncturing it as black holes or wounds marking the terrain. Several shots linger on those carcasses: some of the carcasses are splayed to the elements, others are being pecked at by eagles or other birds. A particularly haunting scene has the camera hovering directly above some charred trees surrounding a patch of snow splattered with blood. Dried up blood, hardened bone fragments, frozen fur, and skin make up the ground where the six hunts take place.

The fact remains that only nonhuman animals die in the film. Or rather: the fact remains that only nonhuman animals are killed. But if they are killed, by Diana's implacability, or by the Engraver, when he inexplicably and suddenly

shoots a mountain lion he had just been drawing, those killings simultaneously repeat and bury, expose and hide, another, insurmountable, immeasurable, primal killing: the one that created the very possibility for a redoubt to be inhabited by solipsistic kinetic European fantasies that landed their mythologies on the North American wild, as if that land were a flat, white page, or an empty room—and then set it to move about, apparently unimpeded. That primal killing, whose gestures are repeated as a kind of choreographic repertoire of violence, albeit toward other native targets, is the slaughtering of the First Nations.

Thus, when the Hoop Dancer lifts the hoops from the floor of the American Legion post and steps into them, is she falling through black holes, into wells of blood? And, if she is falling, aren't also rising through her dance and via her body not only the eagle, the thunderbird, the elk, the deer, the wolf, and the mountain lion but all those "improperly buried bodies of history: bodies abjected even in death, denied ground, place and peace by history's hegemonic narratives and forces," to use the poignant phrase of American sociologist Avery Gordon?[11] What if, through the dance's temporal hoops, all those ancestral spirits whose primal killing made the redoubt, the enclosure, the severed landscape into a colonial abstract space where choreography could draw its smooth, unimpeded lines could return, or rather, approximate—could come closer to the living, and reclaim the ground?

Her dance spreads out its spiritual force, multidirectionally, multitemporally. It is a corroding agent, a healing *and* destructive force undoing the surface of choreo-mythic representation. Its vibrations, its affects, its effects operate just as the molecular deposits in the electroplating process do: blurring and eventually erasing fixed representation thanks to sheer molecular movement.

VI

The last movements belong to the wolves.

Or rather, the last movements belong to all the nonhumans in *Redoubt*. Even if, in the final sequences of Hunt 6, we find the Electroplater dancing under a total solar eclipse, it is hard to ascertain whether she is being moved by her own will or by the combined forces of cosmos and planet, by the wild will of nature to which her bones, muscles, flesh, blood, and skin yield.[12] As she revolves in the open, a pack of wolves ransacks her cabin. Some of the engravings fall on the floor as the wolves move about. As the penumbra thickens, the carefully drafted lines of other engravings, still immersed in a blue chemical solution, endure an uncontrollable accumulation of deposits. Left to the motions of matter, then, the Engraver's plates go through a kind of cancerous process, chunks of copper

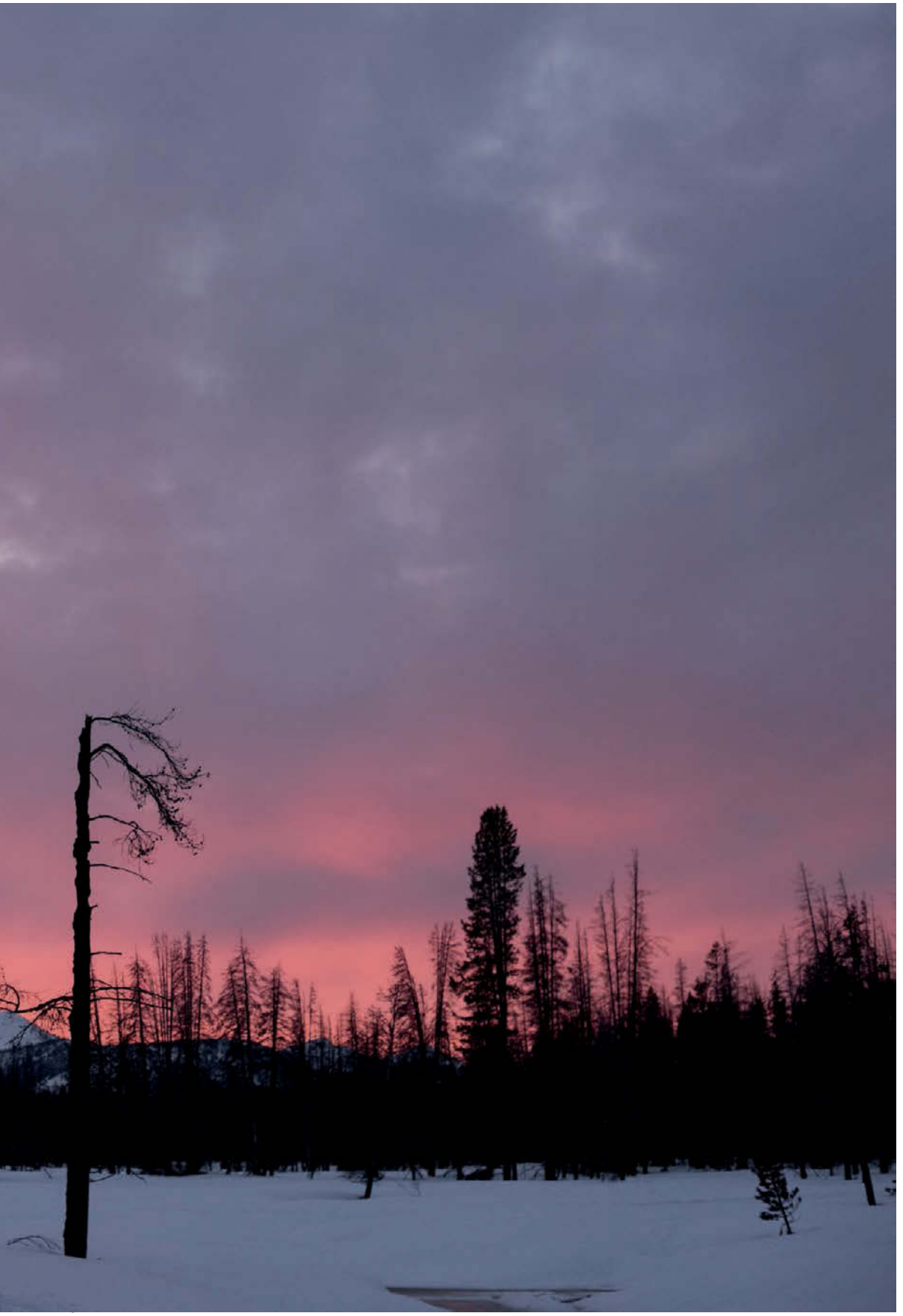
accumulating and smudging the traces of the work of the artist's hand, binding the severed images back to the entropic movement of the cosmos.

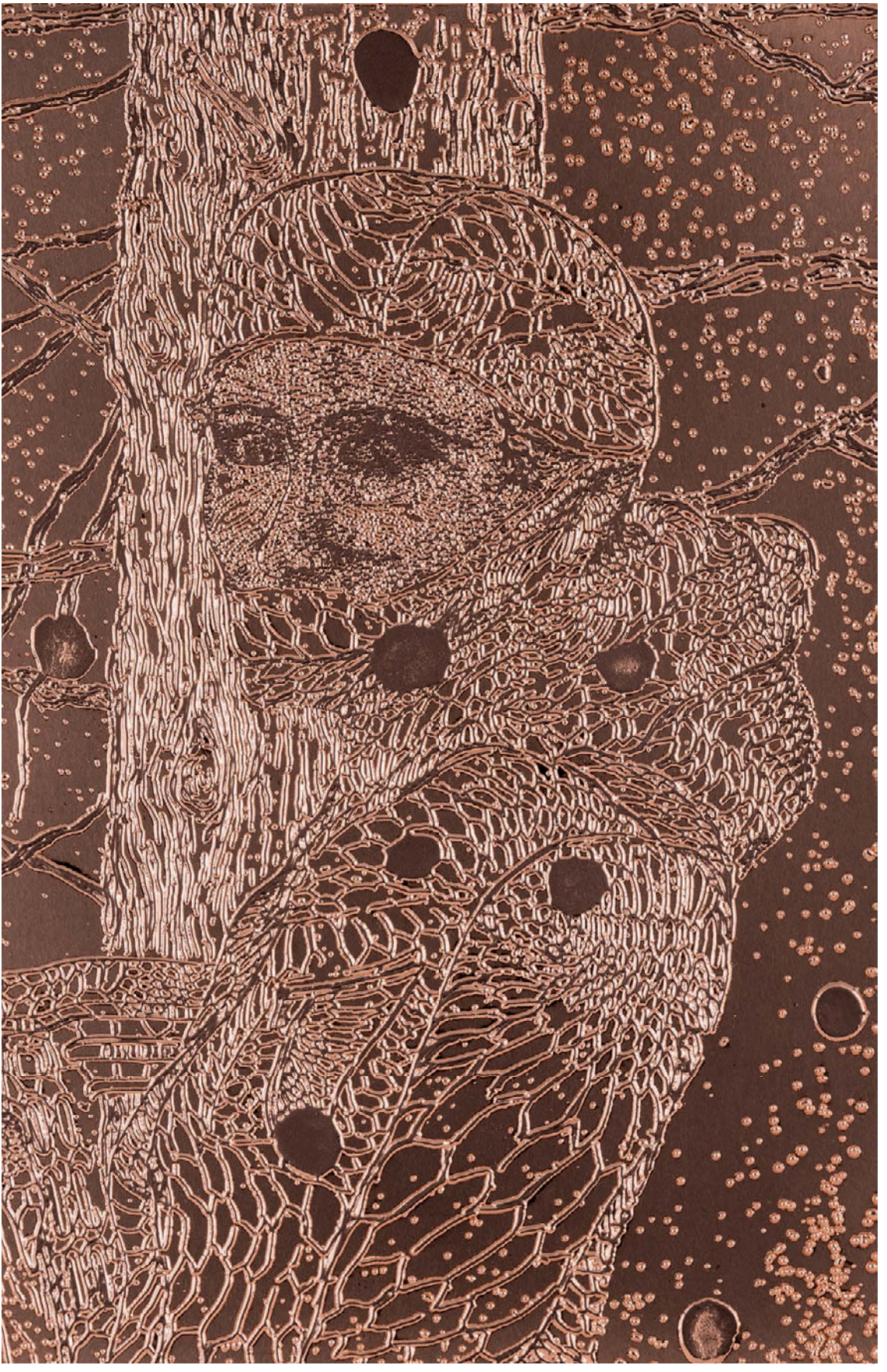
The last movement in the severed is to be overtaken by the implacable beauty of matter's motions.

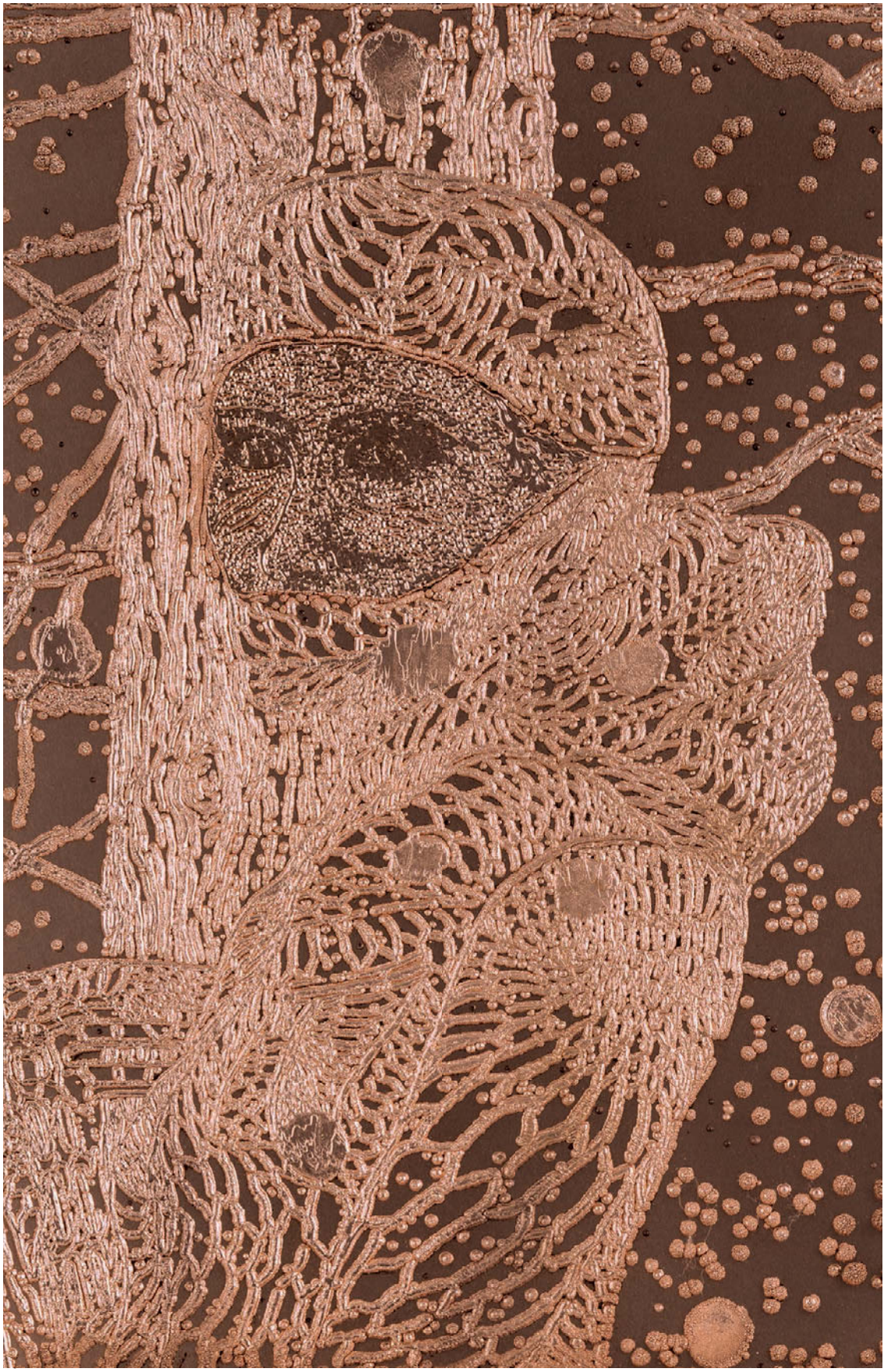
NOTES

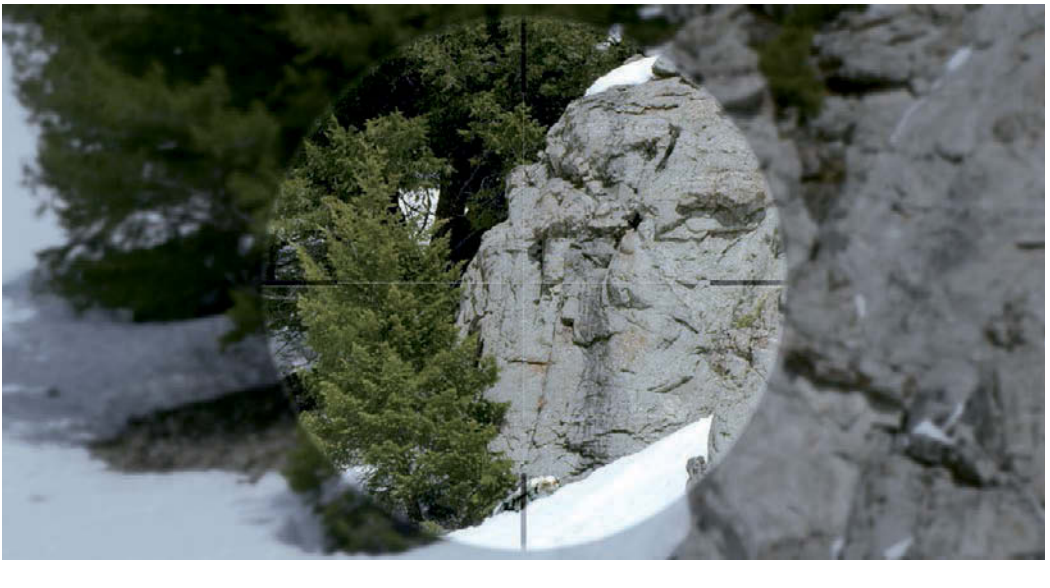
1. Laura Stokes signs the aerial choreography, Sandra Lamouche signs the hoop dance in Hunt 5, and K. J. Holmes signs her solo dances throughout the film, while the rest of the choreography is by Eleanor Bauer.
2. Jean-Luc Nancy, "The Image—the Distinct," in *The Ground of the Image* (New York: Fordham University Press, 2005), 1.
3. Raoul-Auger Feuillet, *Chorégraphie, ou l'art de décrire la dance, par caractères, figures et signes démonstratifs* (Paris, 1700).
4. The "apparatus of capture" concept is from Gilles Deleuze and Félix Guattari and relates to what they call the "power of appropriation" of the State. See Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987), 437. I use the concept in relation to choreography since dance was appropriated by State power to become the new art of "choreography." As I have written elsewhere: "Let us not forget that choreographic power is genealogically majoritarian in the sense that 'choreography' names a very specific masculinist, fatherly, Stately, judicial, theological, and disciplinary project—a project that, moreover, removed dance from its social terrain (the communal yard) and placed it in a private (courtly) chamber, thus subordinating dance to signification, to full presence, and to archiving. In other words: at a certain point in the history of Western subjectivity, a certain social (and socializing) activity called dance fell prey to a Stately (and theological) apparatus of capture called choreography." See André Lepecki, "Choreography as Apparatus of Capture," *TDR* 51, no. 2 (Summer 2007): 119–23.
5. Gilles Deleuze, *Pure Immanence: Essays on a Life* (New York: Zone Books, 2001), 26.
6. Deleuze and Guattari, *A Thousand Plateaus*, 254–55.
7. Jacques Derrida, *The Animal that Therefore I Am*, ed. Marie-Louise Mallet, trans. David Wills (New York: Fordham University Press, 2008), 28.
8. Paul Carter, *The Lie of the Land* (London: Faber and Faber, 1996), 305.
9. Ibid., 328.
10. Ibid., 320.
11. Avery Gordon, *Ghostly Matters: Haunting and the Sociological Imagination* (Minneapolis: University of Minnesota Press, 1997), 16.
12. K. J. Holmes is trained in somatic dance, a technique in which the inner awareness of cellular and organ sensation guide the dancer's movement, as opposed to a willful choreographic drive aimed at form and shape. Tellingly, as a slow pan of the Electroplater's bookshelf shows at the beginning of the film (p. 35), two important titles on this technique are part of her small collection of books: *Somatics: Reawakening the Mind's Control of Movement, Flexibility, and Health*, by Thomas Hanna (1988), and *Sensing, Feeling, and Action: The Experiential Anatomy of Body-Mind Centering*, by Bonnie Bainbridge Cohen (1993).

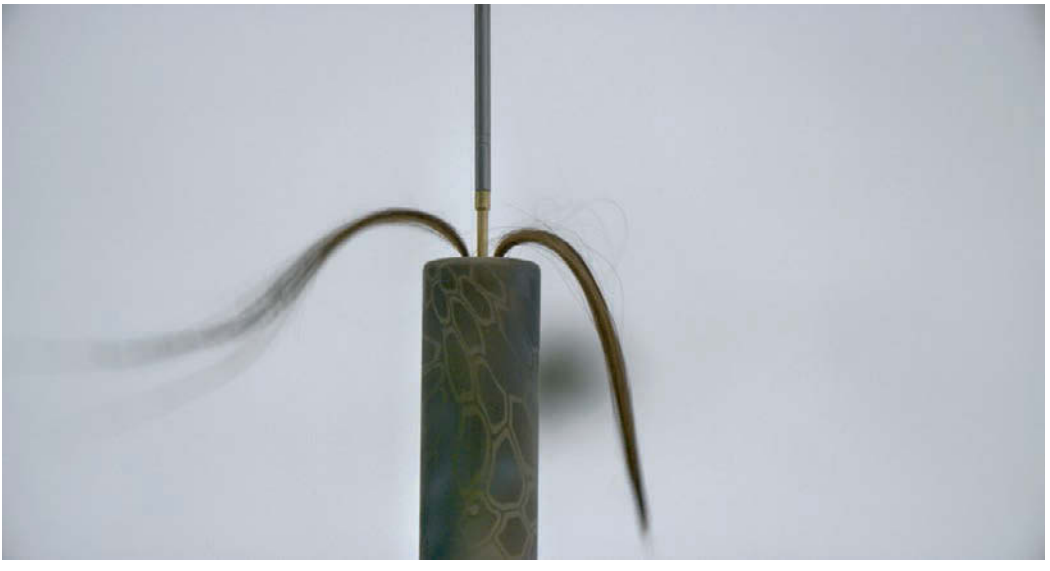
HUNT 6

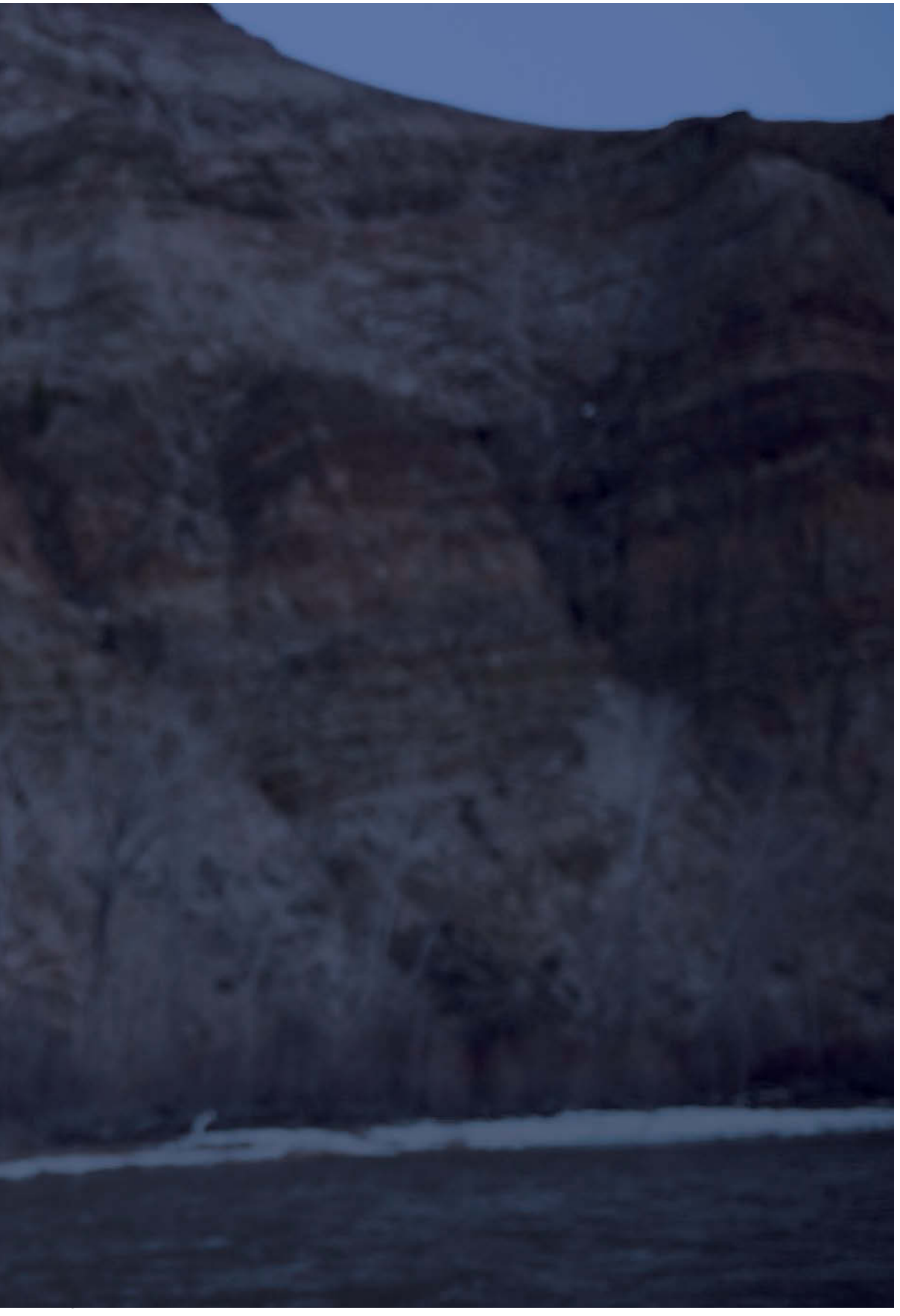


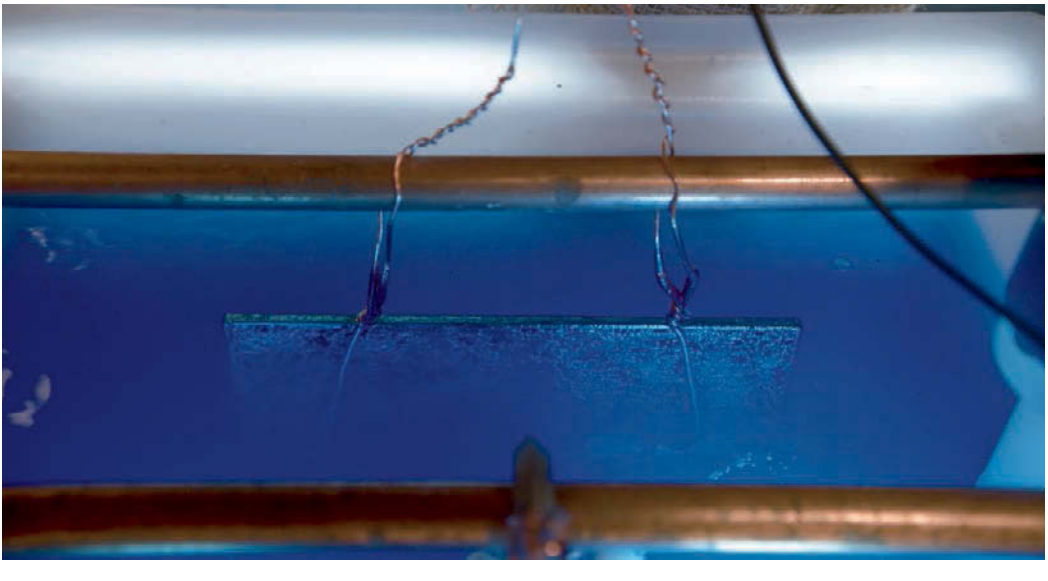


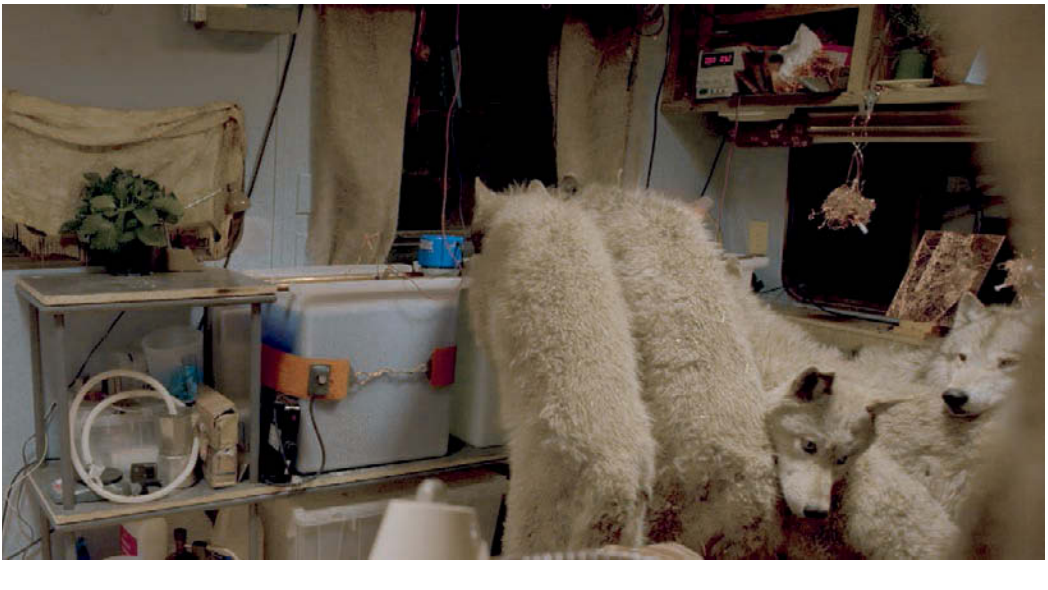


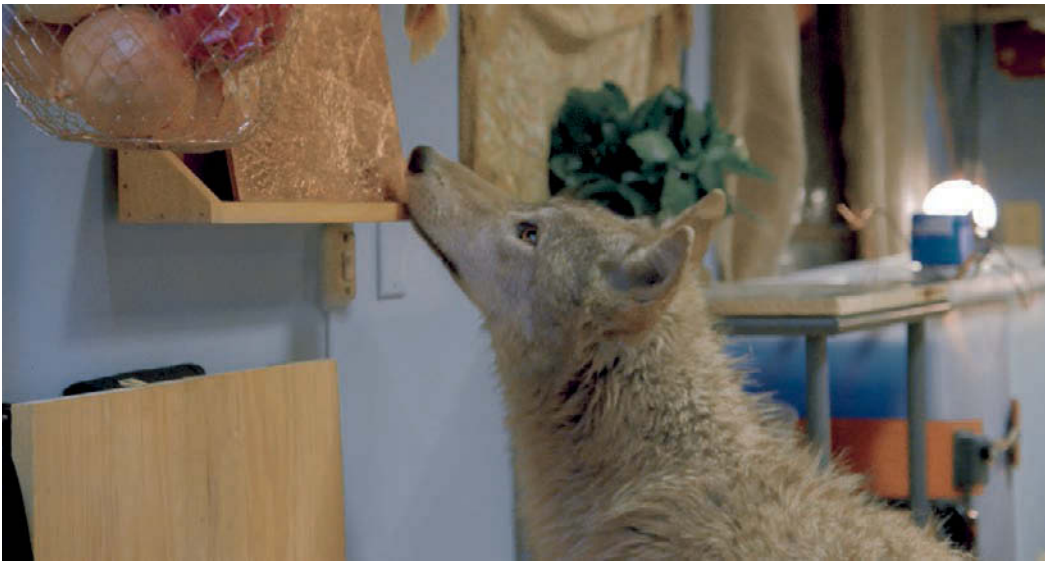


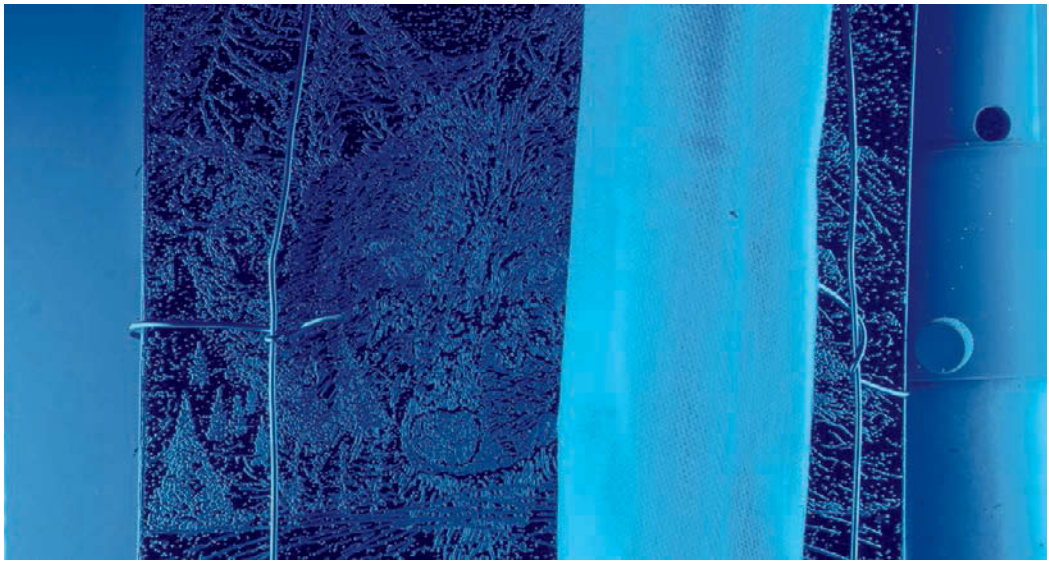


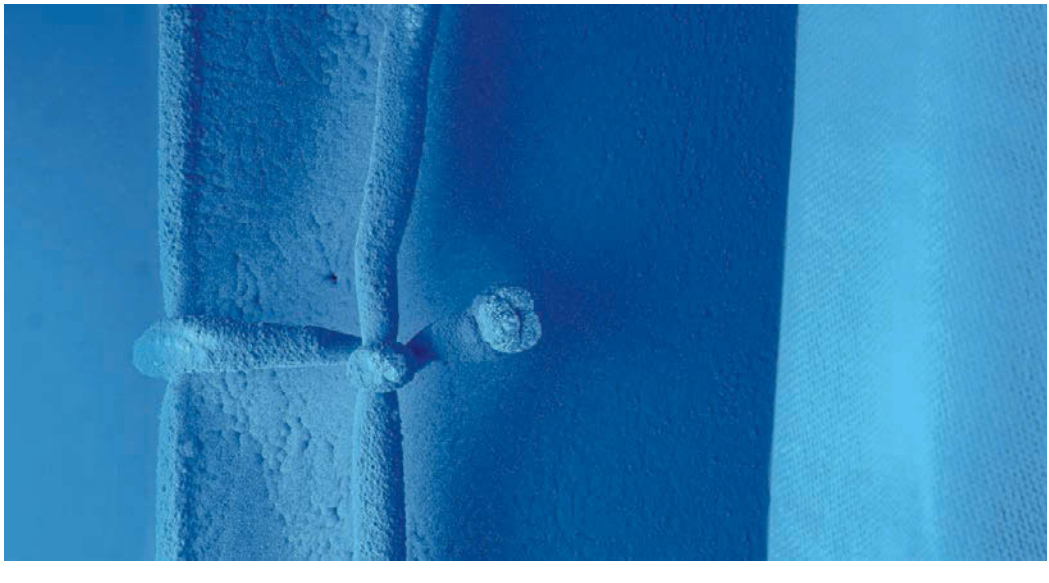












Caspar David Friedrich, "Wanderer above the Sea of Fog," ca. 1817. Oil on canvas, 37 5/16 x 29 7/16 in. (94.8 x 74.8 cm). Hamburger Kunsthalle, Hamburg, On permanent loan from the Foundation for the Hamburg Art Collections, acquired in 1970, inv. no. HK-5161

MYTH JUMPS THE GUN

Molly Nesbit

> The landscape or the way that the landscape holds mythology is probably more useful than a story. —Matthew Barney[1]

Initially we see only soft blue. After we have had the chance to register that it is nothing but color, some northern order of aqua, the blue takes shape and becomes a space. Hard to say whether it is matter or moisture. Gradually we realize that we have been sailing down into the blue from above. A thin blotch widens, deepens, and reddens. Details come more clearly—a head, a bloody head, an elk's head, eaten, the kill still fresh enough that the victor's paw prints circle it like a target. Spiraling, staccato tracks mark what is now visibly snow. Only later do we come to understand that we have begun from the point of view of the moon, and that it has changed into the eye of a wolf. Perhaps wolf and moon are one? A third point of view cuts them off. This third point expands and becomes a window into the idea for which the film is named—*Redoubt*.

Snowy mountains, the Sawtooth range in the dead of an Idaho winter. The third point of view is lateral, the mountains are American, the horizon high, tree-flanked, touched by wild mist. The space is vast and inhuman. With no explanation, we have been handed the point of view of the Wanderer Looking at Mountains above a Sea of Fog (see frontispiece to the present essay). Already we sense, but only sense, the drift of this Wanderer's tale: every image, no matter how immense, comes first from a sight.

Sights yield images. Yet afterimages are already haunting them. The afterimages have no limit: they might take the form of retinal flash; they might lie dormant in the registers of memory; generally, they well up unbidden, like primal scenes.[2] Caspar David Friedrich's painting of the Wanderer has invaded *Redoubt*, of this Matthew Barney is well aware, but other afterimages hover, too. One image after another will enter and thicken his project. The film's scenes will be repeated and stilled in the drawings of a man who looks like a ranger but will be called the Engraver. Artists come into these scenes in many guises, too. By the end, we are shown sights, images, and afterimages composing and being composed. They flash back and forward and give the film its punctuation, as if the images themselves were trading shots.

Fig. 1
Matthew Barney, "CREMASTER 5," 1997.
Production still

Everything happens wordlessly. The many images ultimately pour forward. The film stages their spill.

After the Sea of Fog, we look downhill and see a wolf crossing through what a ranger would call a "stand of burn" (pp. 24–25)—tall pines struck by lightning and consumed by the resulting fire. They are still able to stand witness and do, charcoal relics in a cold charcoal world. Suddenly, without warning or explanation, we see the face of a woman, a huntress (p. 25). We will come to understand that she is the goddess Diana.

Diana, the Romans called her; the Greeks called her Artemis; other peoples would find their own names. This is the goddess who wanted to keep her purity, avoid mortal men, live far from the city and hunt only in the company of her nymphs, ideally virgins as well. She makes her and their independence very clear. Diana is known for her skill as a huntress; she is identified by her weapons, especially her bow and arrow; she speaks in concert with the moon and is sometimes shown wearing a crescent in her hair. In the ancient Mediterranean, the worship of Diana began in temples located deep in the woods. The woods are her home. To see Diana unbidden is dangerous; it breaks her law of detachment. She is known to mete out the most severe punishment to those who transgress.[3] Diana, we now see, has made camp in the Sawtooth Mountains; she has come to hunt, accompanied by two Virgins, a Calling Virgin and a Tracking Virgin. The three of them are wrapped in camouflage. Their arsenal gives them a range of modern weaponry, choices between bows and arrows or bolt-action rifles or shotguns. Is Diana a sight or an afterimage? From whence does she come? The Romans derived Diana's name from *dīum*, Latin for "the open sky."[4]

Fig. 2
Matthew Barney, "River of Fundament," 2014. Production still

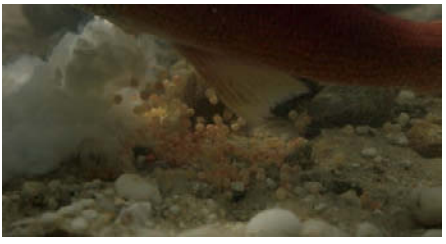


Fig. 3
Matthew Barney, "River of Fundament," 2014. Production still

One afterimage in this Sea of Fog belongs to Matthew Barney personally. It comes from the childhood trips to the Sawtooth Valley that the artist had taken with his family. The Sawtooth landscape was a place where his space of mind grew exponentially. Such an afterimage is primary, a ground line from which a person's image of life can proceed. It is not too much to say that the landscape of Idaho has become the natural starting point for Barney's work. It was extended literally into the line of latitude that organizes the *CREMASTER Cycle* (1994–2002; fig. 1).[5]

In the *CREMASTER Cycle*, the landscapes all along that line of latitude were internalized as it moved east. Stories were generated for these various landscapes. They found themselves in a great dialogue with the actions and reactions of the Cremaster, the phallic muscle. Landscape and muscle, muscle and landscape, the Cycle took the ongoing exchange halfway around the world. The Cycle was making a saga, a tale, as it happened, repeatedly overtaken by the second law of thermodynamics. The journey was drawn into an entropy. It closed grandly underwater in the baths of Budapest, an enchanted underworld rich in lovely nymphs and giant pearls. The odyssey of the *CREMASTER Cycle* accumulated images, landscapes, and myths as it progressed; the net result exposed what Barney would call "the Euro-American riddle inside me" and did not solve it.[6] Inside met outside and outside met inside. The *CREMASTER Cycle* established a scale of time and space for his work. Put simply, Barney had revived the old forms of the epic.

Likewise, *River of Fundament* (2014; figs. 2–3), Barney's next saga, begins in Idaho, this time at the old Sunbeam Dam in the Sawtooth Valley, then

moving to Ketchum, a town in the next valley over. Ernest Hemingway lived there, hunted there, and as an old man took his own life in the house where the story of *River of Fundament* begins formally to wend its way. A series of rivers mix into the River of Fundament, it being a river and a saga, and so as it proceeds, it pulls everything it touches into an underworld that becomes ever more disenchanted. Figures rise up in the gloom: the Great American Novel, the life of the novelist Norman Mailer, scenes from the Egyptian Book of the Dead, the pride of the American automobile industry, something of Walt Whitman's grandiloquent visions all materialize. They will be wrapped in fatal embrace as the entropies, here too, spiral out, devouring one another in stately and tragic succession. At the end, we come back to the beginning, to Idaho, to the River of No Return, which is what the Salmon River is called at its source in the Sawtooths. It is the place to which salmon leap against the current, against the odds, so that they may spawn there before, exhausted from the effort, they expire from it and die. Dying and spawning can be found all along the River of Fundament. These new generations are in turn haunted by some of the actual relics and by the not-so-distant memories that linger from the *CREMASTER Cycle*. In *River of Fundament*, somehow the cycle rises once more, returning at the end to Ketchum, where we see the salmon spawn one last time before a final gunshot tells us that the great Hemingway is dead.

The momentum from these two sagas has brought Barney to *Redoubt*, which picks up once again alongside the River of No Return. The battles this time will be different. The scale will not swell to a war of all against all on the stage of all time and all space. In a certain sense, Barney has returned to the frame as well as to the site of his first afterimage. Different afterimages now will come into the views of the Sawtooths. As they surface, they are netted. Not all of these afterimages belong so personally to him. They enable him to look outward differently and to break the spell of the sagas. Hence, the beginning of *Redoubt*, with its changing points of view, the sights brought by the moon, the wolf, and the Wanderer.

During the same years in which Barney went to the mountains as a child, which is to say in the early 1970s, Robert Smithson went to the salt flats in Utah near the Great Salt Lake and saw something that marked him profoundly:

> As I looked at the site, it reverberated out to the horizons only to suggest an immobile cyclone while flickering light made the entire landscape appear to quake. A dormant earthquake spread into the fluttering stillness, in a spinning sensation without movement. This site was a rotary that enclosed itself into an immense roundness. From that gyrating space

Fig. 4
Gianfranco Gorgoni, "Spiral Jetty with Sun, Great Salt Lake, Utah," 1970. Gelatin silver print, 11⅝ x 15⅜ in. (29.5 x 39.1 cm). J. Paul Getty Museum, Los Angeles, inv. no. 2001.1.11

> emerged the possibility of the Spiral Jetty. No ideas, no concepts, no systems, no structures, no abstractions could hold themselves together in the actuality of that evidence. . . . The shore of the lake became the edge of the sun, a boiling curve, an explosion rising in a fiery prominence. Matter collapsing into the lake mirrored in the shape of a spiral. No sense wondering about classifications and categories, there were none.[7]

Smithson decided to mount an appropriate response on the site itself, working to make something greater than human scale, something equal to the magnitude of the forces he felt pulsing from the strata of the earth. He built a stone spiral into the Great Salt Lake, a road turning in on itself and stopping, a road to nowhere (fig. 4). Afterimages need not bubble up from childhood; first impressions can produce them, too. The immobile cyclone changed the space in Smithson's mind. Smithson's afterimages gave Barney, and many other artists, a new order of ambition for sculpture.[8]

During the same years in which Barney saw his first Sawtooths and Smithson roped himself to a stone borealis in Utah, Paul Virilio was in France. He was writing a book that began with an image from his childhood. He tried to capture what it had meant, at the end of World War II, to gain access again to the Atlantic coast and be able to see the sea. He remembered that the sea appeared to him first in sequences, as he put it, of vision; in his book, he described the view as it came upon him through the window of the train:

Fig. 5
Paul Virilio, "Bunker archéologie" (Paris: Les editions du demi-cercle, 1991)

> The weather was superb and the sky over the low ground was starting, minute by minute, to shine. This well-known brilliance of the atmosphere approaching the great reflector was totally new; the transparency I was so sensitive to was greater as the ocean got closer, up to that precise moment when a line as even as a brushstroke crossed the horizon: an almost glaucous gray-green line, but one that was extending out to the limits of the horizon. Its color was disappointing, compared to the sky's luminescence, but the expanse of the oceanic horizon was truly surprising: could such a vast space be void of the slightest clutter? Here was the real surprise: in length, breadth, and depth the oceanic landscape had been wiped clean.[9]

As Virilio turned back, he saw something else onshore, a line of bunkers that had been built along the Atlantic coast by the Nazis as they anticipated their own military advance westward toward Britain. The void of the sea spoke back to the fascist dream of total war. Virilio would take photographs of this encounter and begin to study it. In so doing, he made a topology for the bunker and began a philosophical meditation on human violence. All this came together in the book *Bunker archéologie* (fig. 5). Just like Smithson's, Virilio's images and afterimages come directly into Barney's work on *Redoubt* and mix.

The idea of the Redoubt becomes a general figure for the human encounter, a figure of offense and defense.[10] Barney's version of the Redoubt will not become an image per se; his Redoubt is instead transparent, a metaphorical shelter in the mind's eye, an imagined place for the hunter, the warrior, the huntress, the philosopher, too, a figure to blow through by sheer force of will.

So many afterimages can crowd out a sight. These afterimages of confluence, waves of them moving into *Redoubt* across half a century and then some, are more than a picture. No single person can or should see them all, or all at once. Gilles Deleuze and Félix Guattari, the philosophers of such effects, would come to describe perceptual intensities like these by invoking a different figure: "a bloc of sensation."[11] To explain it, they conjured a house, though they might well have imagined it as a redoubt. Barney does not give architecture, be it house or redoubt, a visible role as the Engraver sifts through the blocs of sensations in the snow; he lets the vastness of the wild declare itself in the succession of sights. Perhaps it is best to think of the Redoubt as a defensive optical position. Think of it being located in the Engraver's eye.

Myth Jumps

The recognition of an afterimage can cause a person to start. Woods are full of afterimages; whole centuries have gone lost in them. Not many see woods as only lovely, dark, and deep. In *Redoubt*, we are asked to look into them, to look out and outward, indeed every character in *Redoubt* looks out, as if to underscore the need to externalize, not internalize, vision, and to imagine sight expanding, part of a greater collective. Looking outward brought Matthew Barney first, he remembers, to the wolves and to the forces responsible for their survival and regeneration.[12] He finds spawning taking place in the lodgepole pines and in the rivers; he looks at the conduct of the currents and jolts of electricity emanating from the sky. In *Redoubt*, these energies come to be conceived as female.

But before we can understand this energy as it leaps forward, the Engraver, our hero, a Wanderer, arrives. Our sights accompany his sights. Actual hunting will interrupt the flow. Like the Engraver, we see Diana and her Virgins in the woods. He begins his efforts at image capture. The plot follows the thread of his hunts and the fate of these images. The first plates the Engraver takes into the forest are covered with black asphalt, the highway material. Images are drawn and so meet a road wending its way into the wild.

The images multiply as the Engraver takes pains to record what he sees outside himself. He goes lost. His images layer into afterimages, some of them

dreams, perhaps, or mirages. He thinks he draws from nature forthrightly and ends up trapped in Diana's myth. His drawings are matched, we see, by the withdrawals of the goddess. They come, she goes; she comes, they go through states. The dynamic is expressed electrically—in processes beyond the control of the artist—when the plates enter the blue chemical baths of the Electroplater, whose trailer provides a place of refuge and reflection. In her trailer, the current charges, positives find negatives and vice versa, the metal moves, myth jumps. The sight being moved into an image is simplified, but the metals added in the bath then weigh on the image, shade it, change it, scramble its codes. The goddess and her woods go invisible in nightfalls of copper. To try to draw what has been withdrawn is to trespass on taboo.

The mysteries inherent in the Hunts lead over and over again to the destruction of the hand-drawn image: it will be shot, layered with other images, encrusted with metals, attacked, burned, buried. The Engraver's image cedes to outside forces—the natural, chemical, electrical, and galvanic forces that surround it. His images and the sight of Diana do battle—not in a shot-for-shot exchange, for ultimately the film cannot support the weight of this combat, the surge of metal and electric shock. By implication, the sights that have moved into images wrap themselves in an inhuman and divine desire before they can proceed. This gathering of forces and shifting shapes can never be expressed by a single image, not even one allied with armies of afterimages. The forces have emerged from the fogs, the cosmos, and a stillness too large for words; they are seeking to return, or dissolve, into absolute grandeur. All this is communicated in a plotline of image transfers in which the images acquire more and more actual pictorial weight. The film divides them into six different Hunts.

The Gun

Violence, tragically, is part and parcel of nature's project for us. Here, that violence is enacted in the Hunts. Both Diana and the Engraver carry guns; they each take aim, successfully, at the animals who come across their sight. The Hunts will be punctuated by kills. But Diana is also taking aim at the Engraver and his tools, both the gun and the copper plates, his drawings-in-progress. She uses her gunshots to push back on the Engraver's images and his point of view. Two of his images are actually shot. The image is no longer imaginary, Diana is not a dream, death frames the action of these Hunts; be it the death of the image or an animal or a human, the stakes in these encounters are high.

That said, action of all kinds passes through the gun. Receiver, silencer, muzzle, sight—the gun, like the Redoubt, rises to the level of a mental figure and becomes a vessel to carry myth forward, something like a verb. Metal is fired through it. Copper bullets lose their brass shells. Death is indisputably a result. But in the end it is the metals and their fire, not the artist, not the gun, that shape the outcome of the images on the Engraver's plates. In the Nietzschean way, the gun is overcome by these images. The Hunts pass through them. Yet there will be another way to register the Hunts in the Redoubt. This other way takes the form of dance.

Repeatedly, we see dances, interludes that provide some balance to the violence coursing through the forest. The Virgins' choreographed duets in the hot springs just above old Sunbeam Dam give pause (pp. 82–83, 85–87); elsewhere, the Virgins turn and solemnly high-step over snowdrifts; they lie on their backs high above Joe's Gulch (p. 201); lashed to the arms of a giant fire-scarred pine, they open themselves to the universe. Taken together, the dances of the Virgins, the night poses of the Electroplater, and the red-ringed hoop dance of Sandra Lamouche (pp. 197–99), her relay of the legacy of the Bigstone Cree Nation, make for a long line of counterpoint. They seem to answer the images growing ever heavier as the layers of metal silt up.[13]

The sights, afterimages, and images rushing forward as if in a dance of their own have more in common with the dancer Steve Paxton's contact improvisations than with anything we know from Latin myth or war games or the history of art. Once again, we find ourselves in the early 1970s, when Paxton developed this nonformal dance form out of Aikido, the Japanese martial art. In contact improvisation, the burden of the dance is shifted, as in hand-to-hand combat, from one partner to another, back and forth in a push and pull, a touch and catch and carry—presenting one's weight full-force to be met, caught, turned over to one's partner, and then returned, over again, each time differently. These contacts are not to be choreographed or repeated or planned. Contact improvisations come along by chance. A succession of these improvisations builds momentum toward an unknown point and then stops. The point being to jump off the planet, Paxton noted later, and not worry about how one comes down.[14] Paxton saw this to be not a tale of victory or loss but instead a straightforward interaction ending, tacitly, civilly, in mutual survival. No winners, no losers. In the Redoubt, we see this order of contact unfolding, but there it takes another form.

In the Redoubt of the eye, an image is born, the result of the contact we call sight. A sight is caught and turned into an image. It is submitted to a set of exchanges and weight transfers dictated by the Engraver's choice of materials. The image in metal has grown heavier. It has been moved through

its states, bathed and changed. On occasion it is shot by a vengeful goddess. Overcome by the contacts, by chance encounters, by fire and ice, it becomes less and less an image, less and less the optical product of Diana's look and the Engraver's look back. It lives in the elements. The contact generates an unchartable meld of metal and charge. The point of this process remains unknown. All we can do is follow it. In the Redoubt, the image and the hunt have come together to be lost in an object. We have taken the points of view and watched.

In Advance of the Golden Bough

The Hunts come to a head in the strange order of moonlight produced by a day when the moon does not shine but, as it eclipses the sun, goes black (p. 241). It is an end much like the beginning, a scene in which the moon and the wolf pack act as one. The air itself turns an otherworldly violet, the color of lupine (pp. 222–23). The Engraver is gone, though his plates are still being developed in the Electroplater's trailer. As the film ends, the Electroplater has moved out into the night plain to dance (pp. 242–43, 248–49). She uses herself as a medium, the night light becomes her bath and her arms become conductors; she carries the odd spurts of current, dispersed and darting, which jump as they travel upriver between wolf and moon. The wolves have overrun her trailer and sacked it (pp. 244, 246). She, full of her dance, pays them no mind. All along, we now see, she has been acting as the universe's medium: like a Sibyl, she has been the one to show the Engraver the places beyond the purview of the image; she has been the one to show him that there is more to sight than meets the human eye. As if she all along has been there as Diana's priestess, a guide to take the Wanderer through this labyrinth beyond time and space, through the woods, back to the first principles of original sight, the sight before images, the sight that the afterimages have tried to touch and hold. But the film is not the end of the story. The transfer of sight into weight has only begun.

Redoubt is composed of a film, a series of copper plates, and a group of very large sculptures. Giant trees burned by lightning have been brought from the Sawtooth forest and asked to ingest the metals that make gunshot, copper and brass. Their trunks become a different order of barrel, now ghost-gun, now ghost-figure, now ghost-tree. In the foundry, the metals have passed through furnace and crucible, cast positive from wax negatives of bark and camouflage; some come to rest in hollow core molds of the burned trunks. More rounds of contact, more unpredictable effects. Fires have pulled the metal, the wood, and the image into zones that lie beyond the retina, beyond

Fig. 6
Alberto Giacometti, "La clairière (The Glade)," 1950, cast 2007.
Bronze, 23⅛ x 25⅜ x 20½ in. (58.8 x 64.4 x 52 cm).
Fondation Giacometti, Paris, inv. no. X.2016.141

registration, beyond choreography, too; when they cool, all this comes to rest in poses. We see bright metal and char. Some of the trees lie on gun rests.[15]

The gunshot has been reenacted and transmuted, its violence turned and re-channeled. The woods become fire works and channeling mediums in the most expansive, material, and spiritual sense of that word. Perhaps they show the way to the future, a place defined by neither our wars nor our peace. These trees have emerged from waves of catastrophe, survivors of combat, multiple, glittering, free. They bear a strange family resemblance to the thin metal figures, passersby, that Alberto Giacometti brought into being after the Second World War (fig. 6), figures designed to keep the viewer's eye from focusing on any one detail, to keep eye contact at bay. There is no one point of view from which to take them in; they will not be framed optically; they will not, in their turn, become images. They ask to be circled, but they will not submit. We will not win out over them; they will not lose.

Matthew Barney has named some of these trees: there is a great explosive one, complete with a quiver, called *Diana* (pp. 346–47, 350, 352–53); there are the two Virgins (pp. 333–37), one lying supine across the other. Signs of bloom and new growth collect on them all. The wild reassembles in bursts of copper and brass. The otherworldly yet natural energies that course through Diana and through the wolves and through the mountains to the stars find another place to begin again. Impossible to see them closely, the sight is too much for an eye. The trees make it clear that all nature moves in cycles, that energy is never lost. We have been brought full circle—returned, without permission. We are being pushed back out to live with the moon.

NOTES

1. Matthew Barney, conversation with Homi K. Bhaba, 2012–13, quoted in Homi K. Bhaba, "On the Changing Space of Things: Memory and Cartography in the Making of Narrative Sculpture," in Okwui Enwezor, *Matthew Barney: River of Fundament*, ed. Louise Neri, exh. cat. (Munich: Haus der Kunst, 2014), 278.

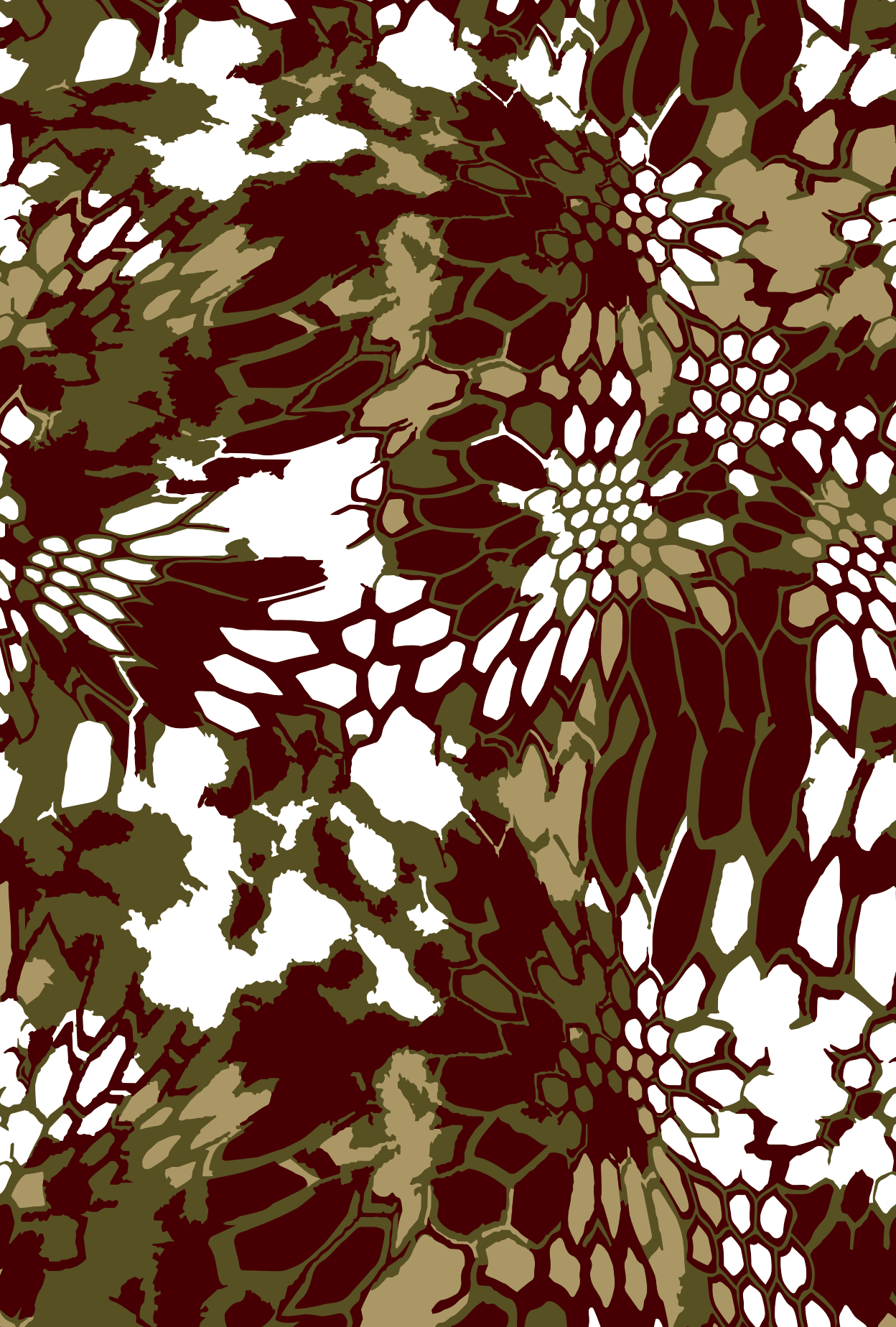
2. The phenomenon of afterimages in physiological vision has been mapped and given historical analysis most powerfully by Jonathan Crary in *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, Mass.: MIT Press, 1990), esp. chap. 4.

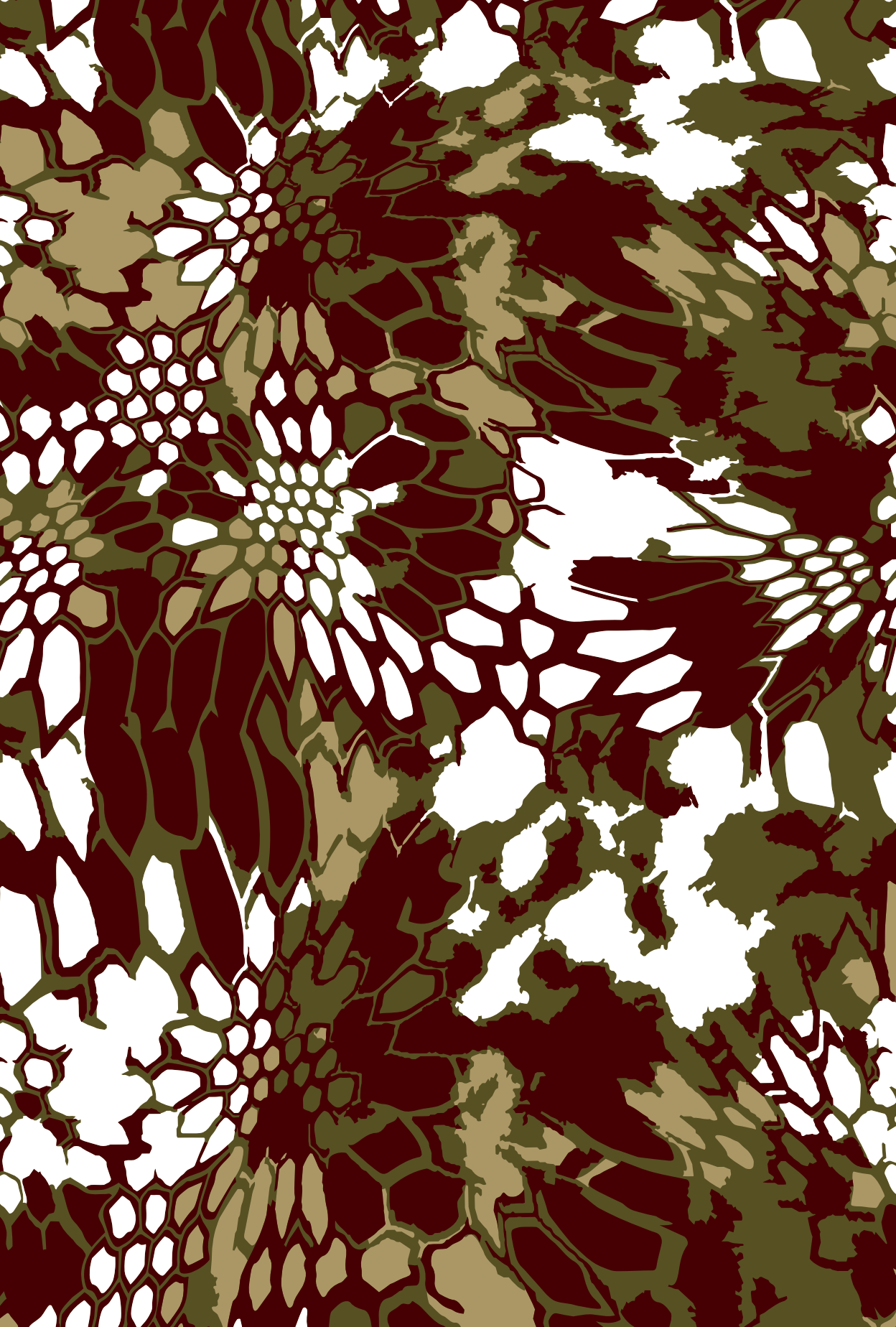
3. The best, most synthetic account of Diana's mythology as a corpus is Roberto Calasso, *The Marriage of Cadmus and Harmony*, trans. Tim Parks (New York: Alfred A. Knopf, 1993), 52, 172, and 216.

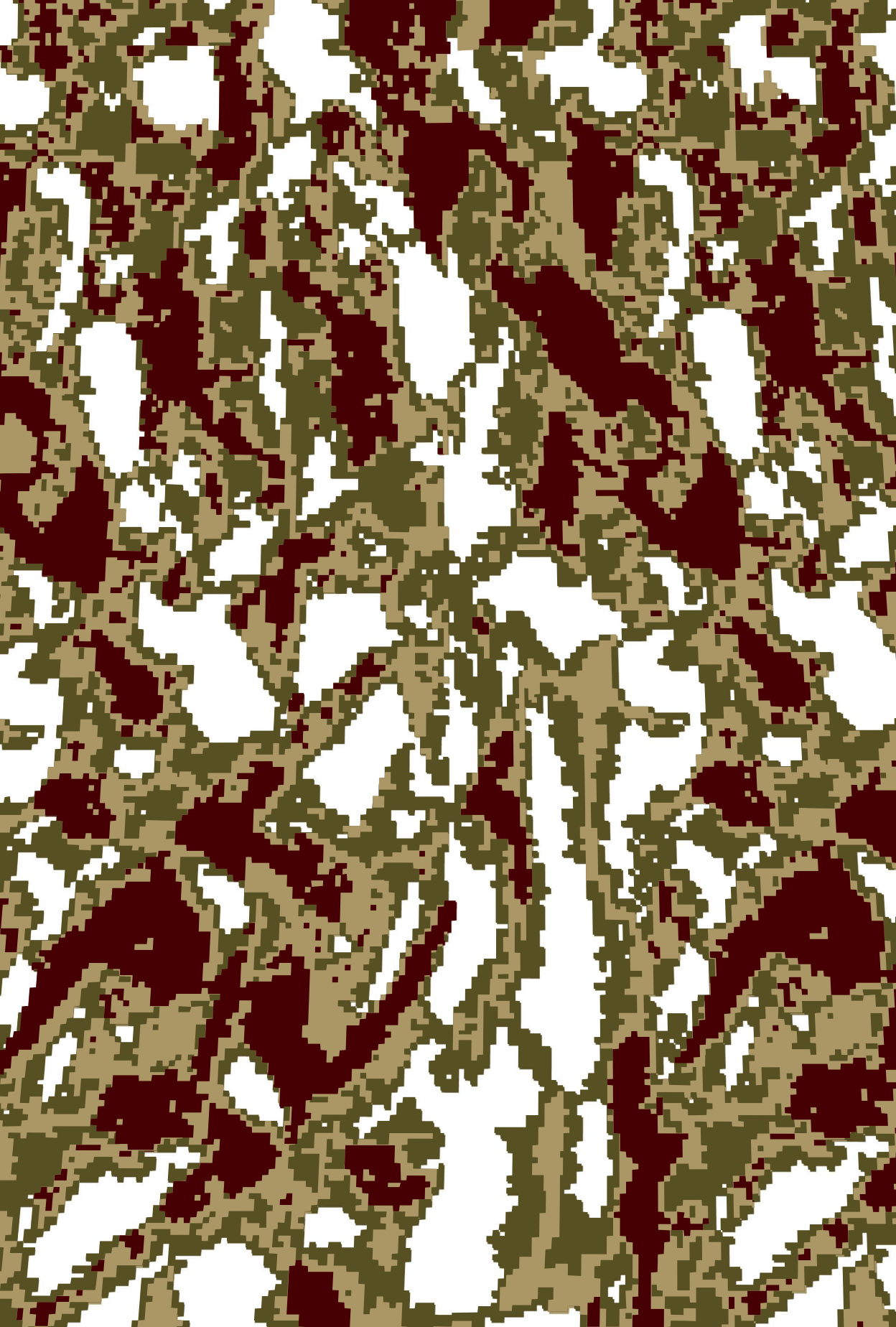
4. Georges Dumézil, *Archaic Roman Religion, with an Appendix on the Religion of the Etruscans*, trans. Philip Krapp (Chicago: University of Chicago Press, 1970), 2:407.

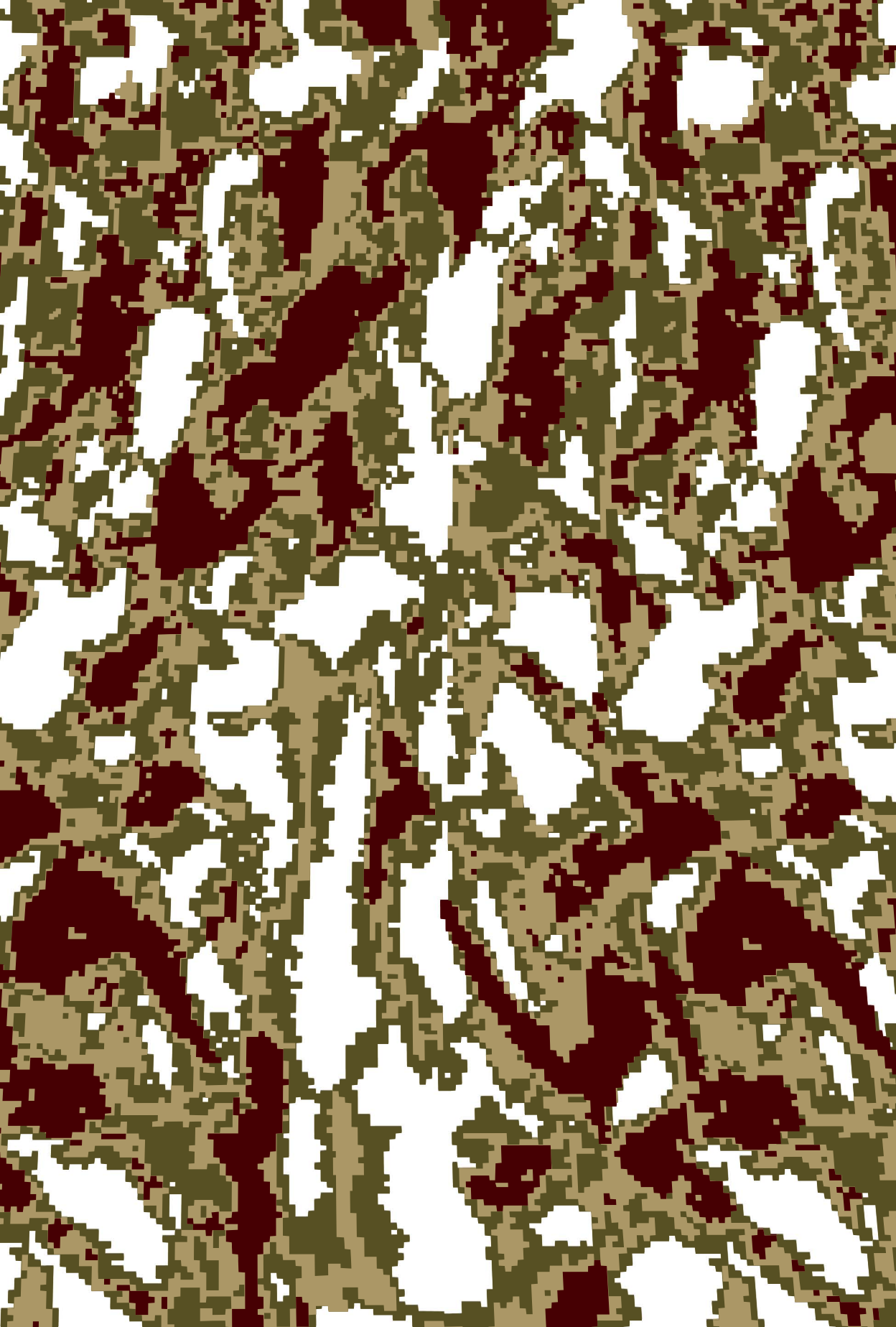
5. For more on the *CREMASTER Cycle*, see Nancy Spector, *Matthew Barney: The Cremaster Cycle*, exh. cat. (New York: Guggenheim Museum, 2002).

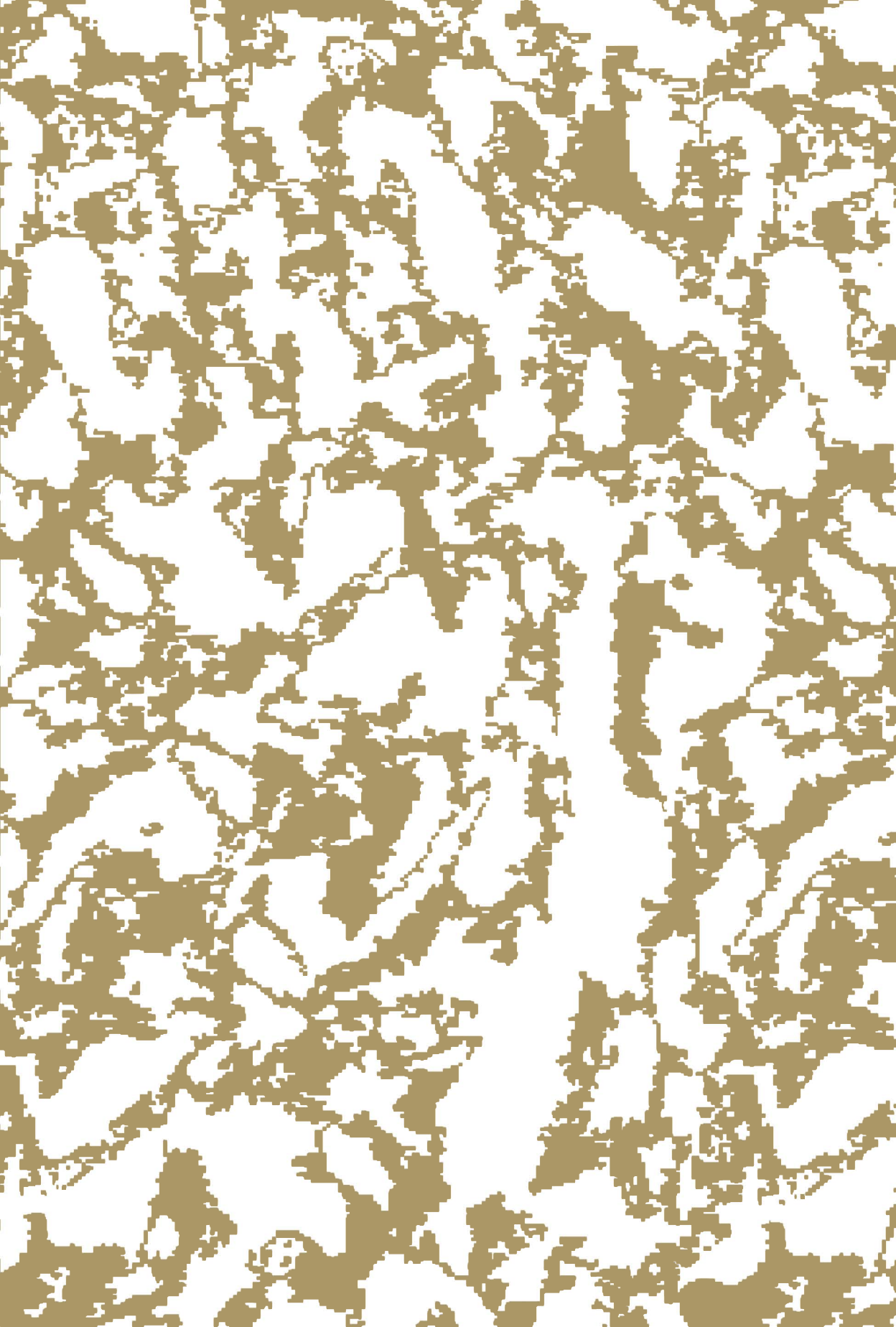
6. Matthew Barney, conversation with author, June 2018.
7. Robert Smithson, *The Writings of Robert Smithson: Essays with Illustrations*, ed. Nancy Holt (New York: New York University Press, 1979), 111.
8. Barney spoke to Hans Ulrich Obrist about the importance of Smithson in his work in Hans Ulrich Obrist, *Matthew Barney*, The Conversation Series 27 (Cologne: Wather König, 2013), 88.
9. Paul Virilio, *Bunker Archeology*, trans. George Collins (New York: Princeton Architectural Press, 1994), 9–10. Originally published in 1975.
10. For more on Barney's use of the term *redoubt* as a title for the project, see the essay by Pamela Franks in the present volume.
11. See Gilles Deleuze and Félix Guattari, *What Is Philosophy?* trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994), chap. 7.
12. For more on Barney's early exposure to the debate surrounding the reintroduction of wolves to Yellowstone National Park, see the essay by Pamela Franks in the present volume.
13. For more on the use of dance in the film, see the essay by André Lepecki in the present volume.
14. Steve Paxton reflects on contact improvisation, its elements, and its significance in the documentary . . . *in a Non-Wimpy Way*, a film by Bojana Cvejić and Lennart Labarenz, https://vimeo.com/76095626 (accessed October 18, 2018).
15. For more on these sculptures, see the essay by Pamela Franks in the present volume.

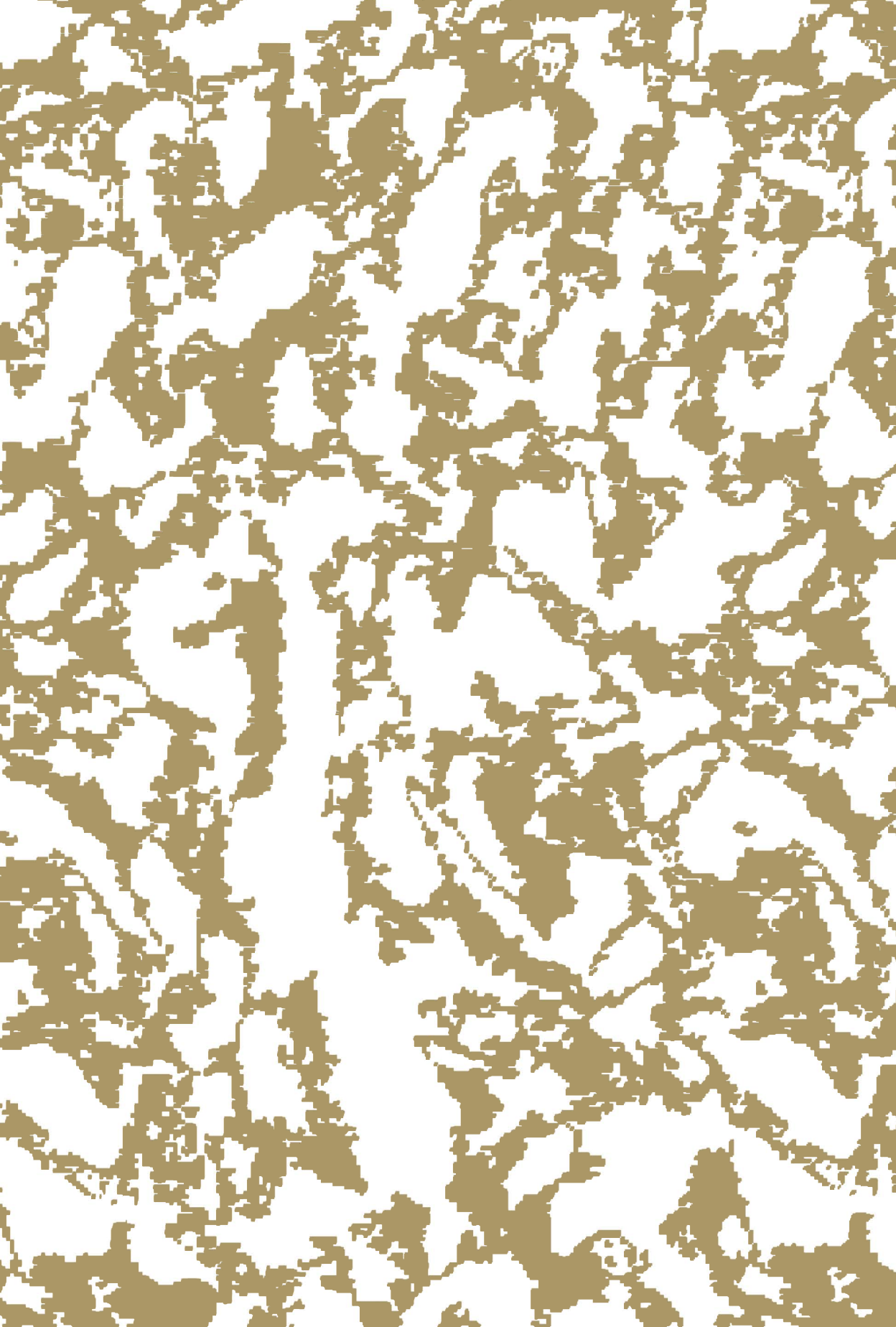


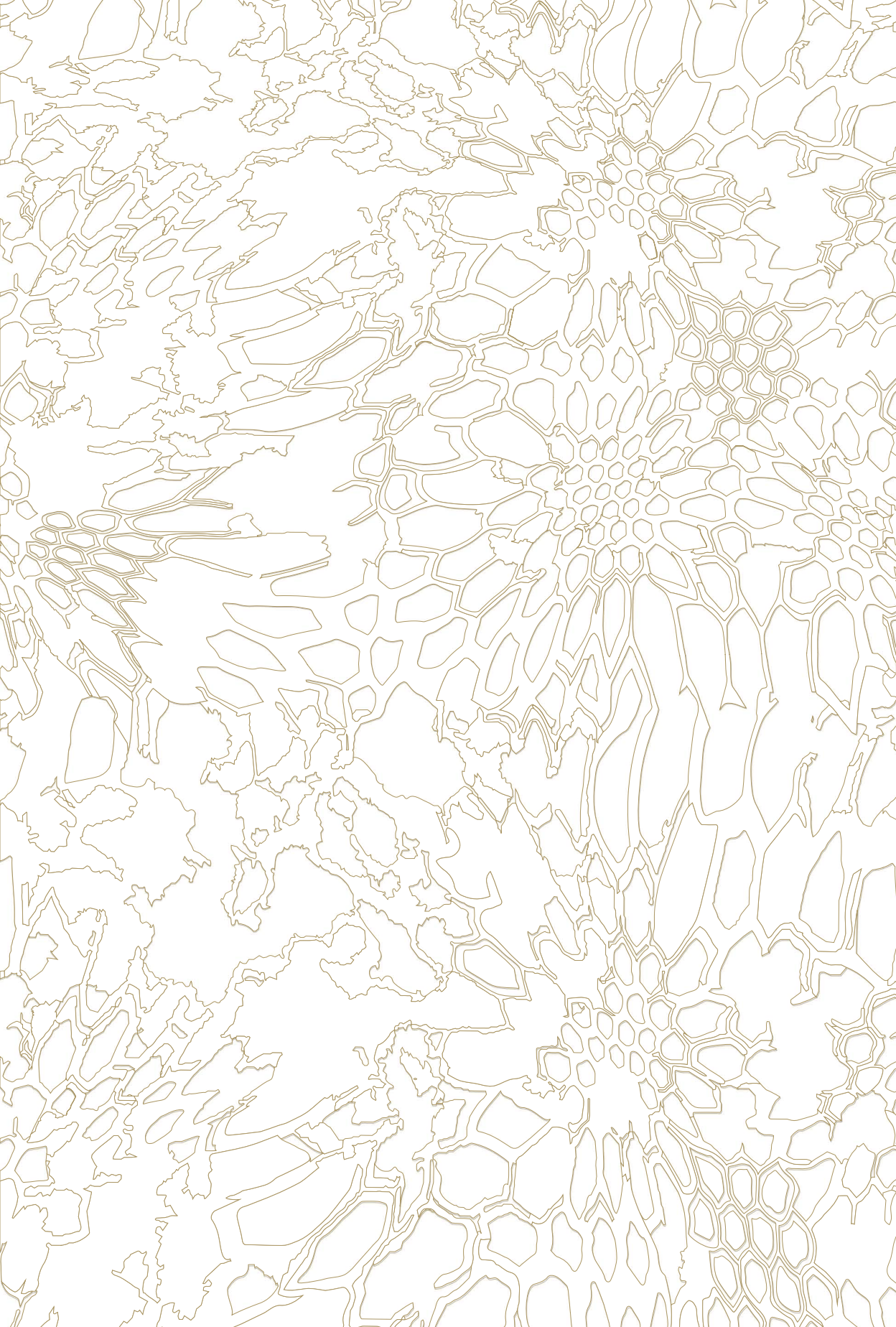


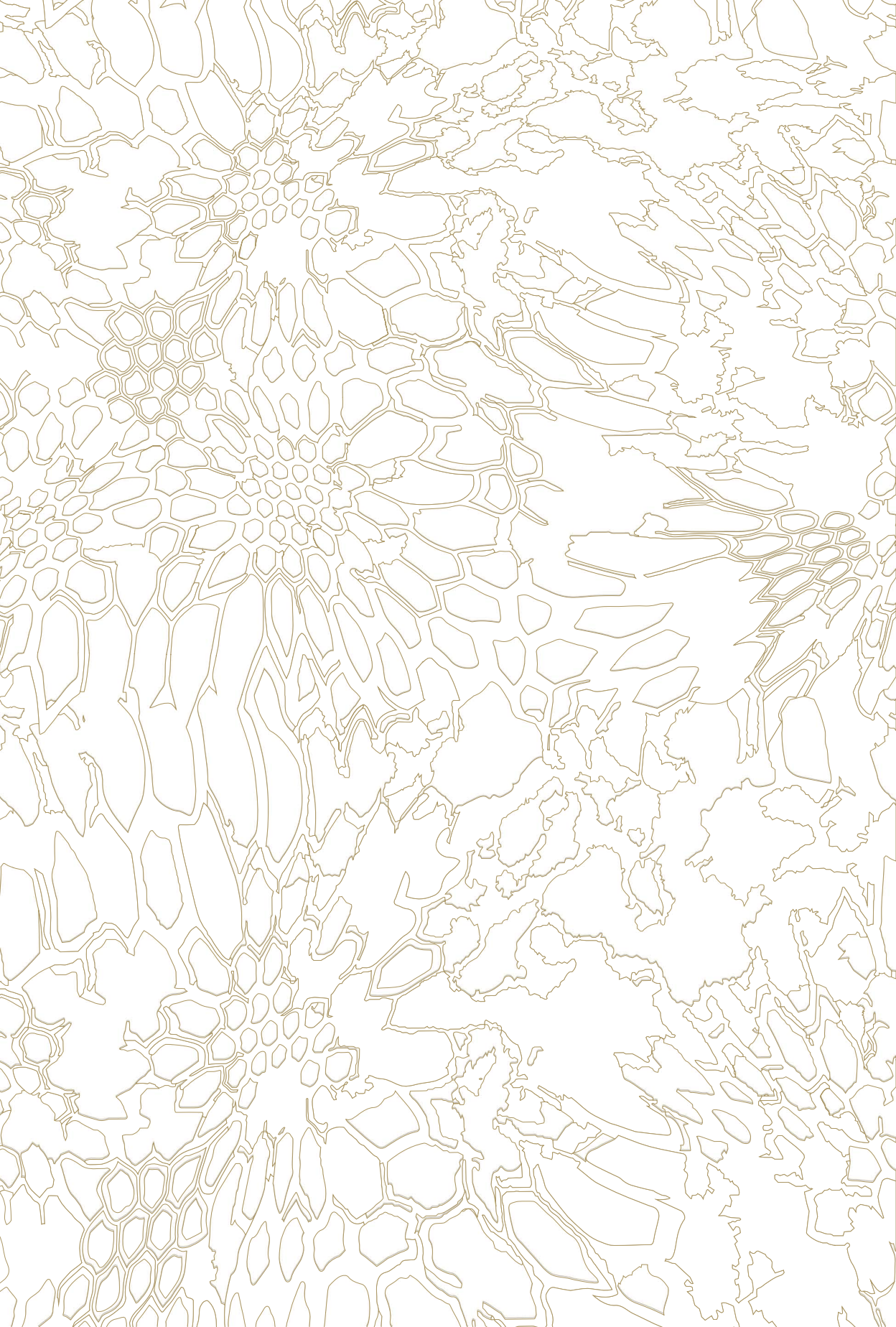












DEERE
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4
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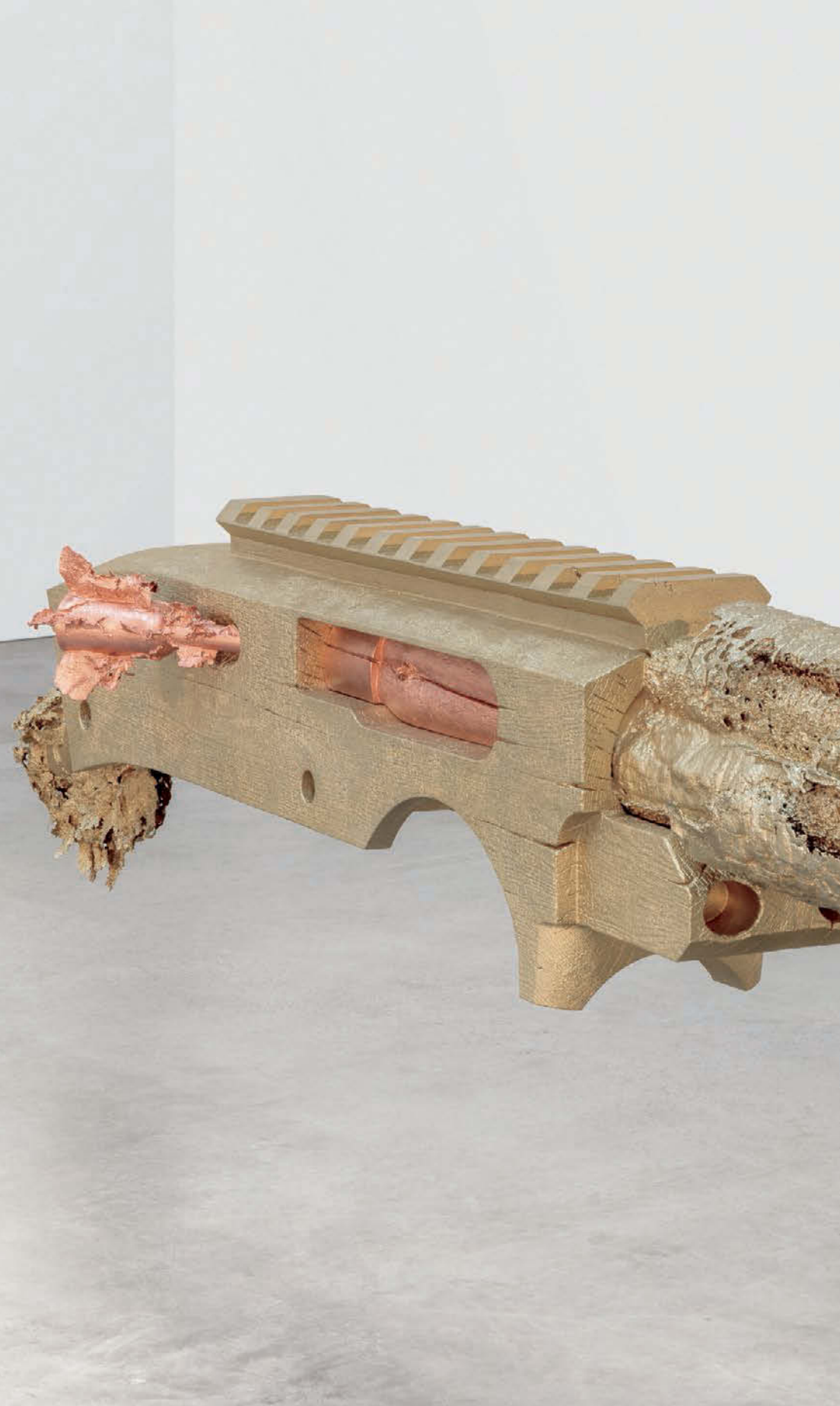
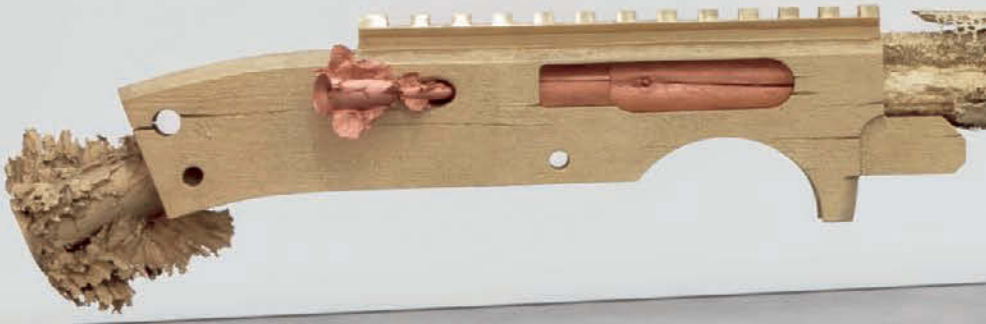
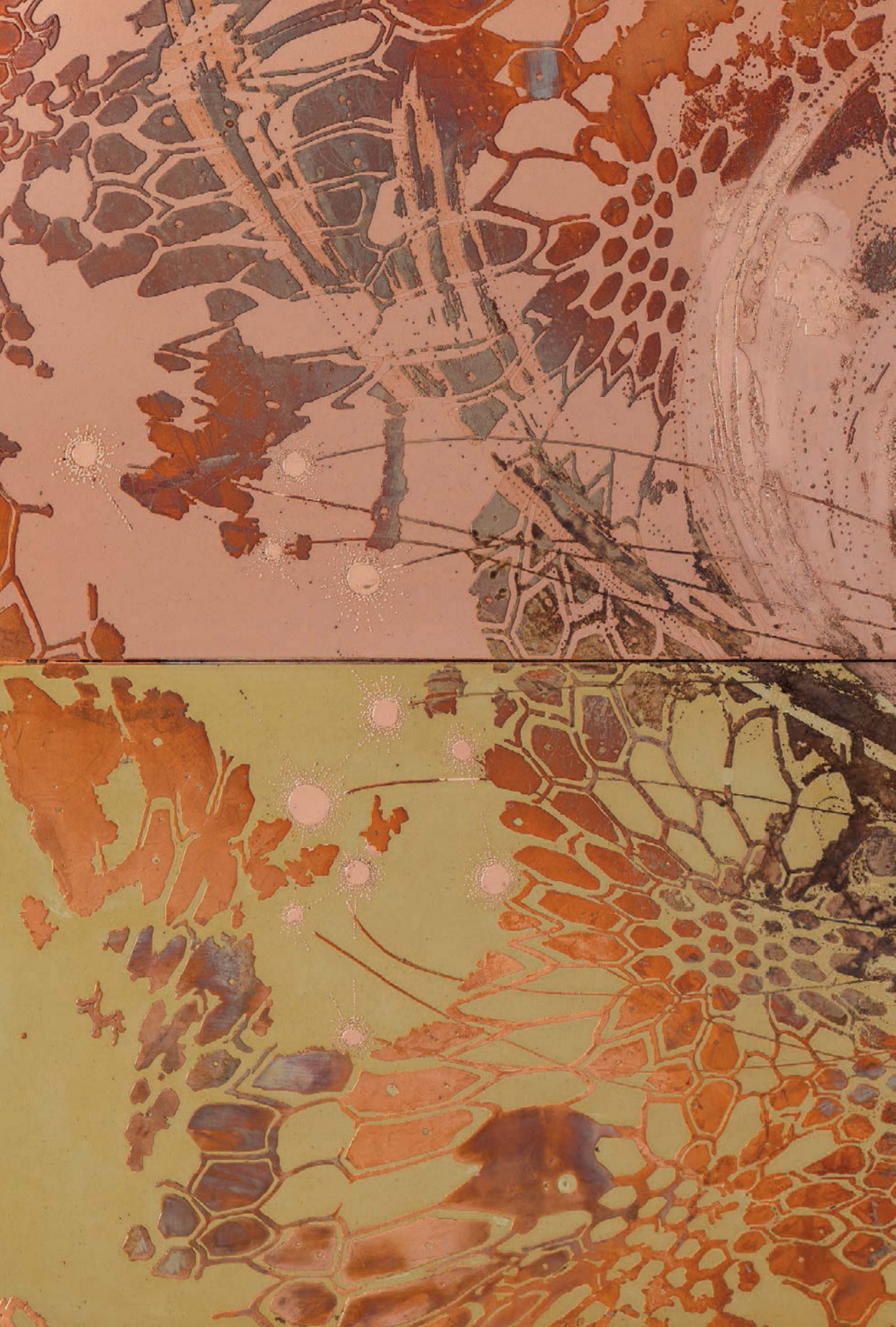
DANGER
KEEP HANDS CLEAR
WHEN EQUIPMENT IS RUNNING







CHECKLIST

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PHOTO CREDITS

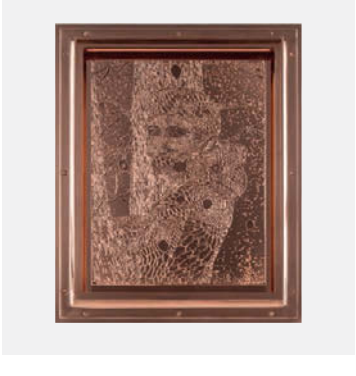
Redoubt, 2018
One electroplated copper plate with vinegar patina and seven engravings, on asphaltum ground in copper and charred pine frames
Dimensions variable
pp. 20, 78, 188, 116, 220, 154, not illustrated, 46

Bayhorse, 2018
Four electroplated copper plates in copper frames and one electroplated copper plate with cast copper wall mount
each frame: 15½ × 18 × 1¾ in. (39.4 × 45.7 × 4.5 cm); wall mount: 25 × 15 x 8 in. (66 × 38.1 × 20.3 cm)
pp. 84, 89, 92, 95, 98

Bivouac: States one and four, 2018
Two electroplated copper plates in copper frames
each 11 × 14 × 1¾ in. (27.9 × 35.6 × 4.5 cm)
pp. 193, 203

Cougar in Bearing Tree: States one through three, 2018
Three electroplated copper plates in copper frames
each 15½ × 13½ × 1¾ in. (39.4 × 34.3 × 4.5 cm)
pp. 124–25, 129

Diana: State one, 2018
Electroplated copper plate in copper frame
14 × 11 × 1¾ in. (35.6 × 27.9 × 4.5 cm)
p. 225



Diana: State two, 2018
Electroplated copper plate in copper frame
14 × 11 × 1¾ in. (35.6 × 27.9 × 4.5 cm)
p. 230

Bivouac: State two, 2018
Electroplated copper plate in copper frame
11 × 14 × 1¾ in. (27.9 × 35.6 × 4.5 cm)
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Bivouac: State three, 2018
Electroplated copper plate in copper frame
11 × 14 × 1¾ in. (27.9 × 35.6 × 4.5 cm)
p. 200

Bivouac: State five, 2018
Electroplated copper plate with cast copper wall mount
26 × 15 × 8 in. (66 × 38.1 × 20.3 cm)
p. 206

Cougar in Bearing Tree: State four, 2018
Electroplated copper plate in copper frame
15½ × 13½ × 2⅛ in. (39.4 × 34.3 × 5.4 cm)
p. 134

Cougar in Bearing Tree: State five, 2018
Electroplated copper plate with cast copper wall mount
27 × 15 × 7½ in. (68.6 × 38.1 × 19.1 cm)
p. 137

Diana: State three, 2018
Electroplated copper plate in copper frame
14 × 11 × 1¾ in. (35.6 × 27.9 × 4.5 cm)
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Diana: State four, 2018
Electroplated copper plate in copper frame
14 × 11 × 1¾ in. (35.6 × 27.9 × 4.5 cm)
p. 237

Diana on Shooting Bench, 2018
Electroplated copper plate with cast copper stand
55 × 45 × 45 in. (139.7 × 114.3 × 114.3 cm)
p. 245

Kill Site: State one, 2018
Electroplated copper plate in copper frame
15½ × 18 × 1¾ in. (39.4 × 45.7 × 4.5 cm)
p. 161

Kill Site: State two, 2018
Electroplated copper plate in copper frame
15½ × 18 × 1¾ in. (39.4 × 45.7 × 4.5 cm)
p. 165

Reintroduction: State one, 2018
Electroplated copper plate in copper frame
13½ × 15½ × 1¾ in. (34.3 × 39.4 × 4.5 cm)
not illustrated

Reintroduction: States two and three, 2018
Two electroplated copper plates in copper frames
each 13½ × 15½ × 1¾ in. (34.3 × 39.4 × 4.5 cm)
p. 149

Sawtooth, 2018
Four electroplated copper plates in copper frames and one electroplated copper plate with cast copper stand
each frame: 15½ × 13½ × 1¾ in. (39.4 × 34.3 × 4.5 cm); stand: 59 × 51 × 38 in. (149.9 × 129.5 × 96.5 cm)
pp. 52, 55, 58–59, 65

Kill Site: State three, 2018
Electroplated copper plate in copper frame
15½ × 18 × 1¾ in. (39.4 × 45.7 × 4.5 cm)
p. 170

Kill Site: State four, 2018
Electroplated copper plate in copper frame
15½ × 18 × 1¾ in. (39.4 × 45.7 × 4.5 cm)
p. 175

Kill Site: State five, 2018
Electroplated copper plate with cast copper wall mount
28 × 16 × 7½ in. (71.1 × 40.6 × 19.1 cm)
p. 176

Reintroduction: State four, 2018
Electroplated copper plate in copper frame
13½ × 15½ × 2⁷⁄₁₆ in. (34.3 × 39.4 × 6.2 cm)
p. 138

Reintroduction: State five, 2018
Electroplated copper plate with cast copper wall mount
26 × 15 × 8½ in. (66 × 38.1 × 21.6 cm)
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Cosmic Hunt: Kryptek Artemis, 2018
Engraved and electroplated copper and brass plate with liver of sulfur in copper and brass frame
20 × 26 × 3¼ in. (50.8 × 66 × 8.3 cm)
pp. 348–49

Diana, 2018
Cast and machined brass, and cast and machined copper
14 ft. 6 in. × 16 ft. × 5 ft. 3¼ in. (442 × 487.7 × 160.7 cm)
pp. 346–47, 350, 352–53

Virgins, 2018
Cast and machined brass, and cast and machined copper
10 ft. 3 in. × 20 ft. 7½ in. × 9 ft. 5½ in. (312.4 × 628.7 × 288.3 cm)
pp. 333–37

Basin Creek Burn, 2018
Cast and machined brass, cast copper, cast lead, and cast polycaprolactone
2 ft. 9¼ in. × 37 ft. 10½ in. × 10 ft. 2 in. (0.84 × 11.54 × 3.10 m)
pp. 322–27

Elk Creek Burn, 2018
Lodgepole pine; cast copper, brass, and lead; and cast polycaprolactone
3 ft. 3 in. × 35 ft. 7 in. × 8 ft. 9 in. (0.99 × 10.85 × 2.67 m)
pp. 306–11

Slug, 2018
Cast copper, brass, and lead
27 × 32 × 28 in. (68.6 × 81.3 × 71.1 cm)
pp. 316–17

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Hunting scenes in *Redoubt* were staged using special effects. Trained animals were provided by professional handlers who monitored their safety and the conditions on set. Wild animals were filmed in their natural habitats.

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